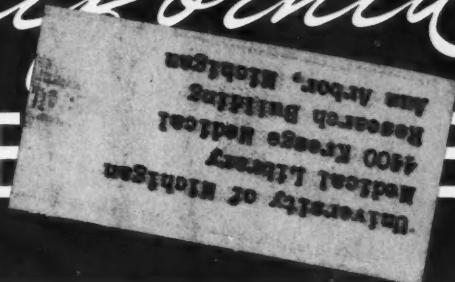


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OF THE CALIFORNIA MEDICAL ASSOCIATION

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AUGUST 1960

Number 2

Medical Planning for Disaster

Brief Résumé of Accomplishments in California 1950-1959

JUSTIN J. STEIN, M.D., Los Angeles

AFTER THE INITIAL ATTACK on Korea in June of 1950, disaster preparedness preparations assumed a high priority in California. The governor held a special session on this subject and some of us who were assigned disaster duties by different organizations remained in Sacramento at that time for approximately two weeks to attempt to set up a medical and health plan as well as a radiological defense plan. A special overall planning committee was formed and approximately forty persons were asked to serve on it. Because of a sense of urgency, plans, organization and training were begun as soon as possible.

It was quickly realized that, with the possibility of many targets under attack at one time, not much medical supply and equipment could be counted upon until many hours or days after an attack. It would be necessary to train as many individuals as possible and at least one member of each family in first aid. Estimates would have to be made of hospital facilities and of the number of trained professional personnel and auxiliary professional groups that would be available. Lists had to be made regarding the schools, hotels and other structures that could be used as improvised hospitals, the amount of transportation available, and the medical

• Extensive accumulation and dispersal of medical supplies and equipment has been carried out in this state since 1950. Although such medical supplies and equipment are inadequate for an all out war type disaster their addition to the medical disaster preparedness program represents a great contribution and efforts must be made to continually supplement them.

All hospitals must have a disaster plan which is well understood and which must be tested by actual test exercises at least once each year.

Preparations for major disasters of all types are costly and time-consuming but represent one of the best possible investments which we can make as insurance against the loss of thousands of casualties.

It is the responsibility of each physician to prepare himself and his family in anticipation of being exposed to natural or man-made disasters.

supplies which could be obtained promptly. These were but a few of the many factors which had to be determined well in advance of any major disaster.

The governor appointed the chairman of the California Medical Association Emergency Medical Committee as the chairman of the Governor's Emergency Medical Advisory Committee. This appointment gave the organized medical profession a place in all top-level disaster planning.

As time went by, it was realized that the Governor's Committee was too big. Now there are only

Presented as part of a Symposium on Disaster Medical Care at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Chairman, Governor's Emergency Medical Advisory Committee; Chairman, California Medical Association Committee on Disaster Medical Care.

eight regular members and seven consulting members representing medicine, dentistry, nursing, public health, pathology, clinical laboratories, American Red Cross, hospital associations, optometry, osteopathy, and veterinary medical associations.

The California Medical Association Disaster Committee is composed of three physicians, all of whom are members of the Governor's Emergency Medical Advisory Committee—one physician is chairman of both committees and the other two physicians are Medical and Health Service Chiefs of Regions I and II, the two largest regions in the state. Recently, Governor Edmund Brown reappointed all three California Medical Association physicians to this committee.

California has an adequate disaster plan. The Civil Defense Operations Plan for this state consists of a basic plan with 24 annexes and provisions of continuity of government. Annex 13-OP is the Medical and Health plan. The State Department of Public Health becomes the Medical and Health Division, California Disaster Office. The Director of the State Department of Public Health becomes the Chief of the Medical and Health Division.

The medical and health services of regions, sectors, operational areas, counties and cities are staffed by public health and volunteer personnel from the medical profession and allied fields. Detailed organization and functions are outlined for each of the regions.

The State Department of Agriculture assists the Medical and Health Service in the detection and identification of chemical and biological agents.

The Department of Mental Hygiene will also assist the Medical and Health Service in medical care.

Private and quasi-governmental health agencies and organizations will be integrated into the Medical and Health Service operations where agreements and understandings have been established with local governments.

During the past nine years, the Disaster Committee has participated in the following:

- Formulating an overall medical policy and organization.
- Preparing casualty estimates for the target areas on the basis of both the 20 kiloton atomic bomb and the 20 megaton thermonuclear bombs.
- Preparing regional annexes and plans for a coordinated medical and health service throughout the state.
- Preparing estimates of costs of medical supplies and equipment.
- Determining the number of first aid stations for the state.
- Determining the kinds and quantity of supplies for the first aid stations.
- Determining the number of first aid stations for each region.
- Preparing requisitions for supplies and correlating them with the operations of the state purchasing division.
- Determining the number and locations of improvised hospitals.
- Keeping Civil Defense and disaster plans flexible. (They were revised after the detonation of the thermonuclear bomb—for example, 75 per cent of all aid stations were relocated so that they would be on the periphery of expected target areas and all Civil Defense emergency hospitals located approximately 25 to 35 miles from the target area wherever possible.)
- Planning and selecting locations for 130 Civil Defense emergency hospitals.
- Initiating and encouraging immunization programs.
- Deciding the kinds of antibiotics to purchase and a system of rotation.
- Helping the California Disaster Office Medical and Health Division prepare numerous training manuals, covering aid stations, treatment of casualties, improvised hospital organization, etc.
- Procuring training units for aid stations and distributing them to various regions.
- Organizing and conducting training courses.

A medical and health survey has been made by the California Disaster Office to determine the capacity for medical care in the event of a major disaster.

The fullest use of paramedical personnel must be made. They will have to carry the major part of the load. Dentists, veterinarians, nurses with training of all types, dietitians, pharmacists, physiotherapists, medical and x-ray technicians, hospital administrators and others in the medical field are included under the heading of paramedical personnel.

It is well known that all preparations for major disasters of all types are costly, but preparation is one of the best possible protections against the loss of the lives of thousands of casualties.

A study made at the request of the Emergency Medical Advisory Committee by the Medical Health Division revealed that if an enemy attack occurs, we will need 443 aid stations in addition to the 683 already provided. When our committee, some time ago, decided upon 683 aid stations, information about the more powerful megaton weapons was not available. A first aid station can handle 600 patients per day and approximately 1,800 in three days.

In an all-out enemy attack it is not realistic to assume that much if any help or medical aid or evacuation of large numbers of casualties will occur in the first week or two.

A total of one hundred thirty Civil Defense emergency 200-bed hospitals have been delivered and stored in this state.

Some 378,000 blood procurement bottles with an equal number of donor and recipient sets at a total cost of \$113,210 have been distributed and are available for immediate use.

Fifty sanitation units (water chlorinating units) have been purchased and distributed at a total cost of \$35,000.

Large supplies of antibiotics were purchased and these supplies are checked each year for potency. Approximately \$25,000 worth of antibiotics are kept in Sacramento and a system of rotation has been worked out so that as this material is used in prison hospitals it is replaced with newer antibiotics as they are developed. This represents a saving in money to the state and insures that a supply of the latest type of antibiotics will always be on hand.

Of the \$12,000,000 Civil Defense appropriation by the State Legislature (item 362.1) in 1951, \$3,167,000 was for "medical and first aid supplies and equipment . . . provided that \$2,000,000 of this amount shall be available only if matched by a like amount from federal grants."

There was considerable pressure exerted on this committee to buy and stockpile large quantities of blood plasma. Several of us on the committee had seen cases of viral hepatitis develop following its use in World War II and we recommended the purchase of only half the amount originally proposed. This decision resulted in the saving of a large amount of money, and time has proved this decision to be a most valuable one.

No matter how much money is available, it takes considerable time to manufacture medical supplies and make them available. It must be expected that for several months after an attack there will not be adequate production of items vital to disaster medical care and for the continuing medical care of the surviving population. For normal consumption, drug stores have supplies on hand for only ten days and many manufacturers have only thirty days' supplies available. Even if the supplies were available, delivery might be impossible in the immediate post-attack period.

Since 1951 very little money has been made available for medical and health services for disaster care, and even the small amount budgeted has been largely for the purchase of surplus items for training purposes.

TEST EXERCISES

This committee is most interested in seeing that all hospitals have a disaster plan which is well understood and which has been actually tested at least

once each year. The only plan of any value is one that is understood by all key individuals and one that has been thoroughly tested.

Short of having a disaster, there is nothing better to stimulate interest in disaster preparedness and to show up existing defects than a good test exercise.

Three test exercises have been held in the Alameda-Contra Costa area. In the first one, in October, 1956, one hospital participated. A second test, in April, 1957, involved five hospitals. Then in June, 1958, 24 hospitals and 3,000 persons took part in the exercise.

Similar test exercises should be held in strategic areas all over California. With stress placed on preparations for nonmilitary disasters, greater public interest could be aroused by the use of Boy Scouts, high school students and many other representatives of the population for special assignments. Placing enthusiastic persons in key positions will do much to lessen public apathy.

Seldom nowadays do we use the term *Civil Defense*. Instead we speak of medical disaster care or disaster preparedness. Civil Defense excites little interest, but nonmilitary disasters such as floods, earthquakes, plane crashes, fires and train wrecks occur often enough to make the possibility real. The flood in California in December, 1955, was the greatest disaster of its kind that ever occurred in this state. There were 64 deaths attributable to flood conditions, and the financial loss was estimated at \$200,000,000 for "direct flood losses" alone by the California Division of Water Resources.

The director of the California Disaster Office, Mr. Harold G. Robinson, has reported that since 1955 the California Disaster Office has obtained financial assistance for local government following natural disaster emergencies totalling \$9,420,000:

Floods of 1955-56.....	\$7,463,922
Malibu Fire, 1958.....	100,000
Floods of 1958.....	1,859,538

With continued assured growth of California, natural disasters will always be a big problem and we must be prepared for them.

In February of 1960 at the Annual Session of the California Medical Association a scientific session was entirely devoted to disaster medical care. Representatives from the federal, state and local governments as well as paramedical groups participated.

Medical schools are teaching disaster medical care as part of the medical students' education.

Being prepared for disasters will have to be part of our way of life from now on. Self-help and mutual aid form the basic tenets of our planning and organization.

Much remains to be done.

University of California Medical Center, Los Angeles 24.

Fallout Dosage and Monitoring

SIMON KINSMAN, Ph.D., San Francisco

THE RADIOLOGICAL CONTAMINANTS from the atom bomb are fission products. The hydrogen bomb utilizes the energy from the fission reactions to start a thermonuclear or fusion process which produces helium from hydrogen and likewise releases energy. Since the helium (He^4) is not radioactive, and is a gas, the increase in fallout activity produced by a thermonuclear weapon must come from the fission of the uranium or plutonium that is used as a fuel.

An estimate of the amount of material composing the fission products can be obtained from the data on ordinary A-bombs, namely, that for each 20,000-ton TNT equivalent rating about two pounds of radioactive material is produced in the fission process.⁵ A 15-megaton bomb would produce some 1,500 pounds of radioactive material.

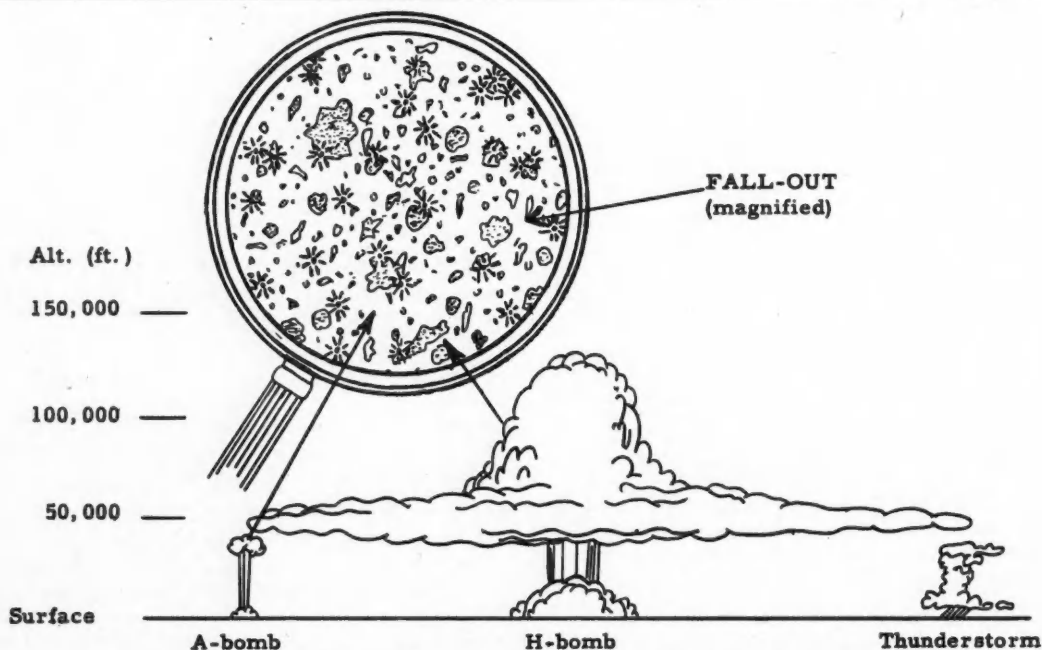
FALLOUT

The energy released in an explosion of a nuclear weapon is sufficient to vaporize and heat to incan-

• At present there are a large number of people capable of conducting the task of surface and area radiation monitoring including external monitoring of personnel. Once the extent and the intensity of radioactivity in an area is determined, good use of personnel can be made without too much risk. This is fortunate for the medical profession whose personnel can devote their talents to casualty care during or following nuclear warfare. Most individuals who know how to detect and measure the extent of radioactive contamination are also capable of conducting personnel decontamination operations and would do so if necessary. Consequently the spread of contamination can be minimized by adequate decontamination and the medical personnel can treat casualties who are relatively free of external radioactive contamination. The appropriate use of trained manpower and radiation detection equipment which are available in California combined with sufficient rehearsals prior to a nuclear war will greatly reduce any casualty damage due to radioactive fallout.

The chances of survival of individuals can be greatly improved with a little knowledge of protection from radioactive contamination and of salvage of food and water.

Presented as part of a Symposium on Disaster Medical Care at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.
Radiological Health Consultant, Region IX, United States Public Health Service, Department of Health, Education and Welfare.



Comparative size of A-bomb mushroom, H-bomb mushroom and ordinary thunderstorm cloud.

descent all the fuel (uranium, plutonium and hydrogen bearing material), the fission products, the bomb casing and components, and the radioactive materials produced by neutron bombardment of the medium surrounding the bomb at the time of detonation. This incandescent mass, called the fireball, starts skyward shortly after it is formed, and at the same time becomes diluted with air, dust and dirt from the ground and the space between the ground and point of detonation. The fireball then appears as the frequently described mushroom-shaped atomic cloud, the internal portion of which is still extremely hot, but cooling as it ascends. When the vaporized components of the cloud cool sufficiently they will condense or solidify. This process generally takes place on the unvaporized material such as the dusts which were sucked into the cloud during its ascent. The solid particles, whether they are radioactive or not, will begin to descend as soon as they are swept out of the rapidly rising cloud by the cross winds at various altitudes and as soon as the mushroom-shaped cloud has reached its ultimate height. The precipitation or settling of these radioactive particles is known as fallout. The extent and nature of this fallout will be determined by such factors as altitude of the burst, the height to which the cloud rises, type of medium in which the bomb was detonated (air, liquid or solid) and the meteorological conditions as illustrated on next page.²

It is generally stated that the fallout from an air burst constitutes little or no radiological hazard, that the hazard from a subsurface explosion would probably not spread far from ground zero, but the fallout from a surface burst might be dangerous even at some distance from the explosion. Since the fireball produced in the detonation of a hydrogen bomb is several miles in diameter, it is likely that the explosion would be a contaminating burst. In addition the radioactivity released in a nuclear weapon is in proportion to the energy released, and these weapons are now considered to have TNT equivalents of millions of tons (megatons). Consequently the fallout from a surface burst of a weapon of this type would constitute a serious hazard in an area of 7,000 or more square miles.

In estimating and predicting the area affected by fallout, it is necessary to have good meteorological data and to utilize personnel with training and proficiency in meteorology to plot the data and evaluate the results. Two factors that are always considered in calculating the fallout areas are the size of particles formed and the prevailing winds. The large dust particles settle rapidly and are affected for the shortest time by the prevailing winds. The smaller dust particles settle slowly and are spread to greater distances.⁵ An important point to remember in the estimation of fallout areas is

that the surface wind plays only a small part in the distribution of these particles. Upper level winds often blow in opposite directions to those at lower altitudes.

For all critical target areas, the U. S. Weather Bureau makes twice daily forecasts of the direction of fallout drift and the probable arrival time. It is planned to expand this service to cover all areas of the country. This information provides to local, state, regional and national Civil Defense the data necessary for the construction of fallout plots. Details of the program are described in FCDA Advisory Bulletin No. 188, dated May 25, 1955, and Supplement No. 1, dated August 16, 1955. Instructions are included for constructing fallout plots from the Weather Bureau forecasts.

These fallout predictions are useful for Civil Defense planning, but limitations must be recognized. The present forecasts do not cover all of the country; they apply only to the critical target areas. Since forecasts are released only twice a day, the fallout plots sometimes will be based on wind measurements more than 12 hours old.

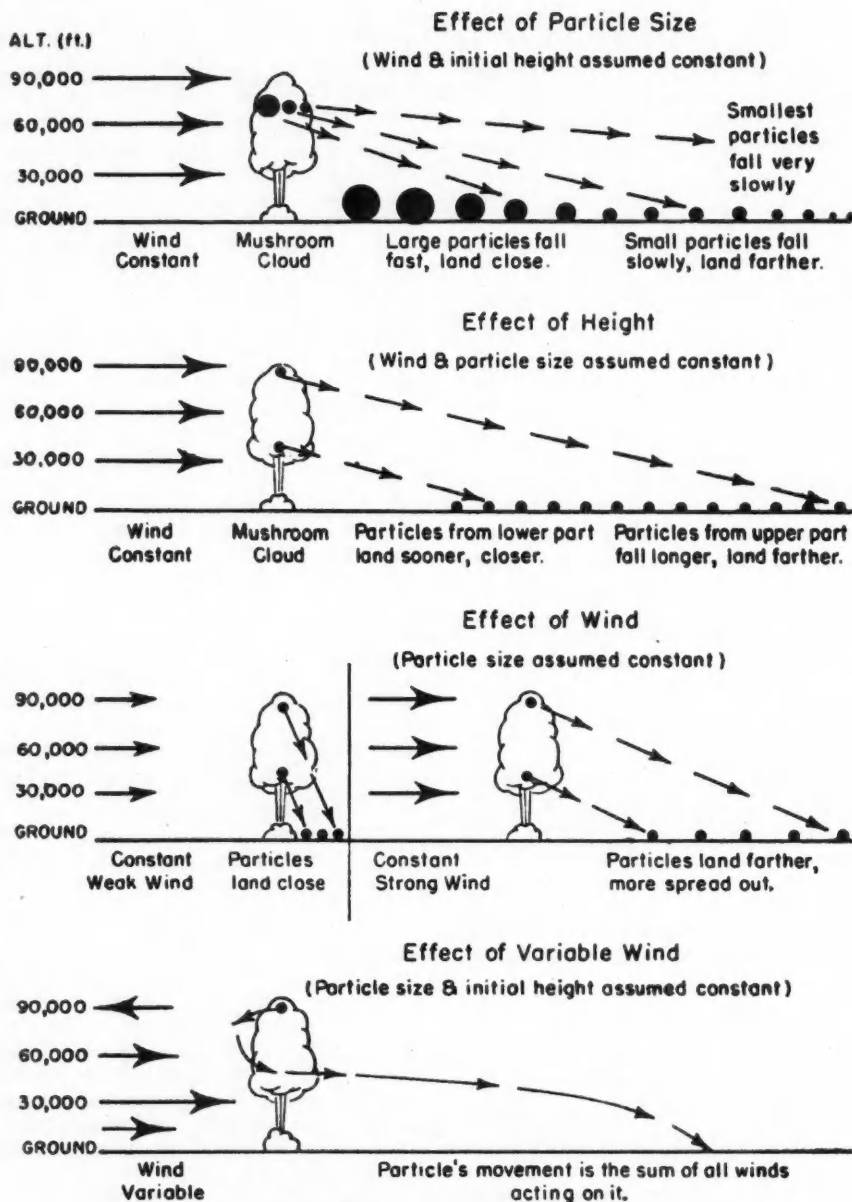
The data as released by the U. S. Weather Bureau will not be sufficient in itself to ascertain the radiation levels in the fallout areas. The H-bomb tests in the Pacific were helpful in providing some information on contamination levels for that particular detonation in that area. The following table gives an estimate of probable contamination from a 15-megaton weapon.⁴

Time (After Burst)	Contaminated Area	Average Intensity (Gamma Radiation per Hour)
1 hour	250 sq. mi.	2500 roentgen
3 hours	1200 sq. mi.	200 roentgen
6 hours	4000 sq. mi.	30 roentgen

If we ever experience fallout contamination from a nuclear weapon the accuracy of the prediction of fallout area will depend upon the accuracy of the weather data at the time and the abilities of our meteorologists. In any event, monitoring will be necessary to determine the contaminated area and the amount of radiation to which people in the area are exposed.

RADIOLOGICAL HAZARD

The half-life of the radioactive materials in the atomic cloud varies from a few seconds and minutes for some species, to hundreds of years for others. The fallout will contain many radioactive species, some of which can be an internal hazard if they are admitted to the body, and all can constitute an external hazard when outside but in the vicinity of the body. With such a wide variety of contaminants present in different amounts and each decaying at



Factors affecting distribution of radioactive particles.

its own rate, the task of obtaining the desired information on the amount of radiation which a person might receive if he were required to work in the fallout area appears a difficult one. There is, however, an empirical relation between (1) the intensity of radiation in the fallout, (2) the time interval between radiation measurements and, (3) the average decay constant for fission products. This empirical relationship is an exponential or log-

arithmic one and all expressions of time must be in terms of the same unit, generally in hours.

The relationship between the total body cumulative dose, the intensity of radiation an hour after the explosion ($H + 1$) and the length of time of exposure also involves a logarithmic solution. Both of the above empirical relationships are incorporated in the nomograph shown on the following page, which can be used as follows:

- (1) To obtain the activity or intensity of radiation at any given time, utilize:
 - (a) A radiation detection instrument to measure the activity or intensity of radiation from the contaminating fission products (fallout) at a known time after the detonation or blast, and
 - (b) Columns A, B and 'D' of the nomogram.
- (2) The dose for the first hour after the blast is approximately 2.5 times the dose accumulated between $H + 1$ and $H + 2$ hours. By using columns B, C and F of the nomogram, the cumulative dose from $H + 1$ to any other time may be obtained.
- (3) The infinity dose (dose for a long or infinite time) is the accumulated dose received by exposure to the effective life of all the fission products, and may be calculated from any desired time after the fallout has occurred by using columns B, C and E as illustrated in the following examples:

PROBLEM

SOLUTION

1. The radiation level in a contaminated area has been measured to be 500 milliroentgens per hour (mr/hr) 8 hours after an explosion of an atom bomb. What was the radiation level 1 hour after the explosion?
Place a straightedge connecting 500 mr/hr on column D with 8 hours on column A. Read from the point at which the straightedge crosses column B (6,000 mr/hr).
2. What is the cumulative radiation dose in a contaminated area between $H + 1$ and $H + 8$?
Connect 6,000 mr/hr on scale B with 8 hours on scale F. Read from column C, a cumulative exposure of 10,000 mr (10r).
3. What will be the infinity dose in the area following $H + 8$ hours?
Connect 6,000 mr/hr on scale B with 8 hours on scale E. Read from C, an infinity dose of 20,000 mr (20r).
4. What dose will personnel accumulate who are in the contaminated area between $H + 2$ and $H + 8$?
Solution of problems of this type require the subtraction of two cumulative dose computations.
Cumulative dose from $H + 1$ to $H + 8$ has previously been computed to be 10r. To determine the dose between $H + 1$ and $H + 2$, place a straightedge to connect 6,000 mr/hr on scale B, with 2 hours on scale F. Read 4,000 mr (4r) from scale C. The dose from $H + 2$ to $H + 8$ is the difference between these two determinations: $10r - 4r = 6r$.

MONITORING

As a basis for measures to protect personnel remaining in or likely to enter an area after nuclear detonation, the degree and extent of radiological contamination must be determined. A few haphazard instrument readings will not suffice; a systematic survey is necessary. In general, there are two steps that should be included:

1. The first step, concerned with the gross contamination, is a rapid survey to determine the immediate safety precautions and necessary rescue operations. This survey applies to either land or sea areas and should be made by air monitors and followed by surface monitors. It is apparent, however, that in order to obtain enough data quickly, it will be necessary to have a number of trained monitors to take measurements of radioactivity throughout the area suspected of contamination. These monitors may be anyone designated by the Civil Defense chief in the area. They must be well trained in the use of instruments and in making accurate reports of the observed data. A monitor should also know how to interpret the results of his findings to a degree sufficient to be responsible for his own immediate safety and that of others near him in case he should find himself in a region of great radiological hazard. The instruments to be used by such monitors have been specified by OCDM. However, other portable beta-gamma radiation detecting instruments may be used, if they are available for such operations.

Monitors should be assigned to each unit area on the basis of a previously designated grid system. Following radiological attack, each monitor should proceed to his assigned area and conduct his survey with a high-intensity survey meter, taking frequent readings, until he reaches an area in which radioactivity is above the tolerance level as previously established by the defense organization. He should report his findings to the proper authority promptly and frequently by whatever means of communication is available, preferably two-way radio. If the monitor finds that he is already in an area above tolerance, he should evacuate to an area of lesser activity, warning others to do likewise. If he finds that his entire area is below tolerance, he must stand by within his area and continue monitoring and reporting, unless ordered otherwise.

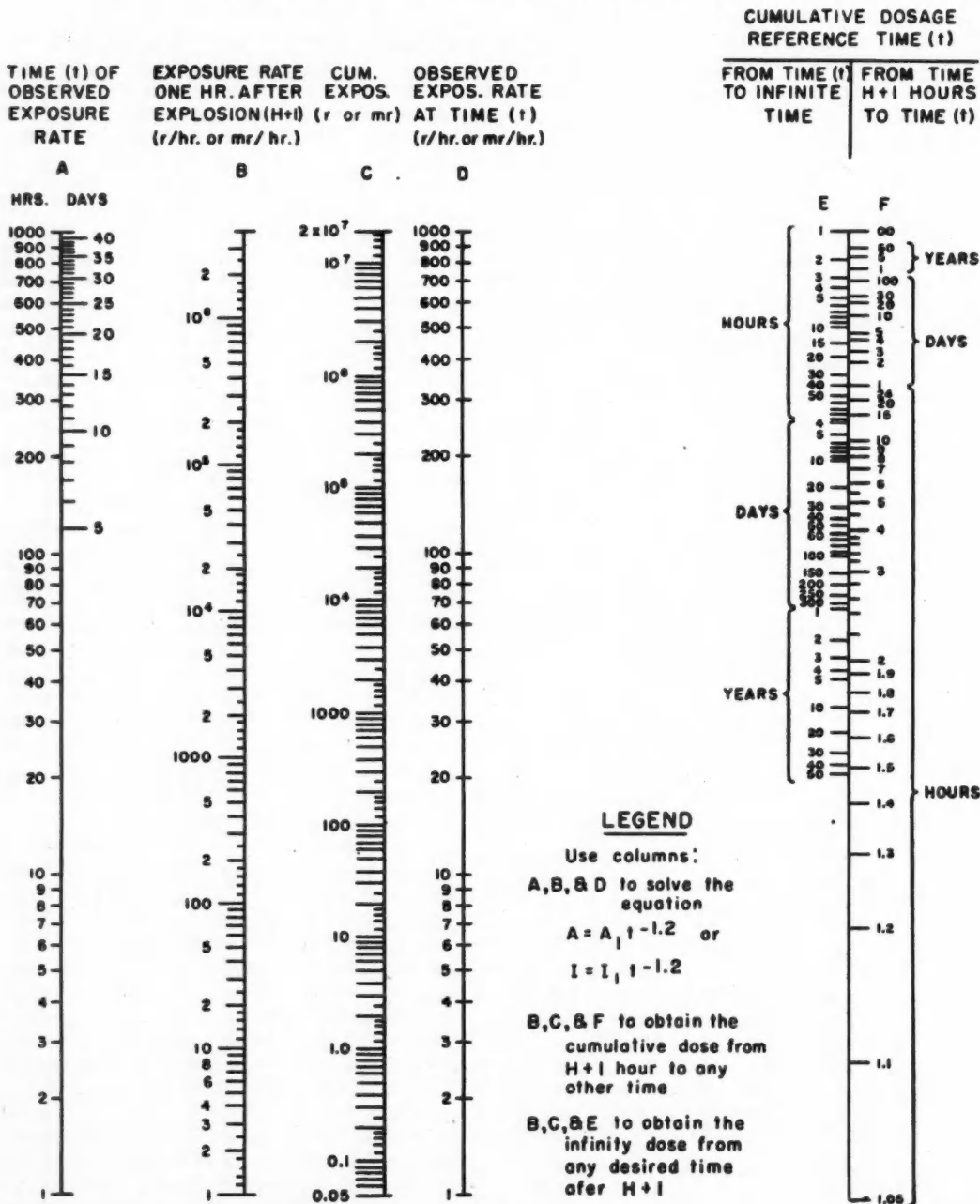
2. The second step should be a detailed and accurate survey over a considerable time to obtain information on the exact nature, extent and rate of decay of the radioactivity present. This survey may include analyses of contaminated samples by state department or university laboratories and should lead to a prediction of the probable degree of hazard remaining in the area at any specified future time. Such information is vital in determining the extent to which evacuation, decontamination and reentry into the area should be effected.

Assuming that the rapid survey within any given unit area has been completed and that the monitor is still within his area or that he has reentered an area where the intensity has decayed sufficiently to permit at least short-duration operations, the monitor will proceed with the detail survey. This time

he may use a more sensitive or lower-intensity survey meter, such as a G-M type, taking readings at more locations and with greater regularity. It is important that he continue to report his results to

the proper authority or to the damage control center. If there should be no radiation evidenced except normal background count within the area under survey, monitors must nevertheless make continued

GAMMA RADIATION DOSAGE FROM FISSION PRODUCTS



A=Radioactivity at arbitrary time. A₁=Radioactivity at any stated time thereafter.
I=Intensity of radiation at arbitrary time. I₁=Intensity at any stated time thereafter.
t=time interval between A and A₁ or I and I₁. H=Explosion of bomb.

surveys of their entire areas if these lie within the region of possible fallout. This is necessary to detect any later increase of intensity and thereby warn of approaching fallout and possible hazard. Indications of the absence, as well as of the presence, of radioactive contamination are important to the Civil Defense officer who is plotting the overall situation.

During this detailed survey, the monitor should select samples of earth, water, or small exposed objects and transmit them through his Civil Defense Central Office to a radiological laboratory where they may be checked for radioactivity. Laboratory analysis should also lead to certain conclusions as to the types of materials constituting the contamination. This information would prove useful in selecting suitable decontamination procedures to be employed and, together with carefully recorded intensity readings taken at regular intervals at a few points specified by the defense officer, will form the basis for calculating the time that must elapse before a radiologically hazardous area becomes safe for occupation.

In summarizing survey operations, it cannot be too strongly emphasized that the rapid, yet accurate, reporting, recording and charting of data obtained are vital necessities if correct conclusions are to be drawn by the Civil Defense officer. Upon these conclusions, the commanding officer must base his decisions for such subsequent action as rescue, evacuation, decontamination and rehabilitation. It should also be remembered that monitors and other personnel required to work in possibly hazardous areas should be provided with suitable protective clothing and equipment and with dosimeters to provide a record of the cumulative dosage received by any one individual. This record should be used as a basis for shifting personnel to duties in less hazardous areas when they have been overexposed or appear to be in immediate danger of accumulating too great a total exposure to radiation.

In estimating the probable decrease of the radiation hazard with time, the decay rate of the ashes of the nuclear weapon can be approximated by considering that for every seven-fold increase in the age of fission products, there will be a ten-fold reduction in the radioactivity or intensity of radiation as illustrated below:

Contamination in Curies of Radioactive Material	Time After Formation of Fission Products	Radiation Intensity from Fission Products (Roentgens per Hour)
1,000	1 hour	10,000
100	7 hours	1,000
10	49 hours (2 days)	100
1	14 days (2 weeks)	10
0.1	14 weeks (3 months)	1

Any area that is still dangerous three months after the detonation will remain so for a long time. Unlike airbursts, surface and subsurface bursts present a hazard to all persons entering the area for some time after the explosion. The degree of the hazard will depend on the time elapsed before reentry. The civil radiological defense officer must solve this problem, either through the use of a plot, by the multiple-decay equation, by special sliderules, or by nomograms (page 76).

Some kind of radiological survey is desirable regardless of the type of burst. A natural rainfall within an hour after the burst could greatly affect the area in which it fell. Raindrops passing through the contaminated air might carry down a significant amount of contamination. Lung protection must also be considered if it is intended to operate in a contaminated area while radioactive dust might still be suspended in the air the monitors breathe.

SALVAGE OF FOOD AND WATER

It should be borne in mind that radiation is more easily dealt with when it is outside than it is when within the body. Decontamination of the skin is far easier than decontamination of the lungs, liver or bones.

All food in the damaged area may be dangerous. The food may contain some induced radioactivity, but probably not in hazardous amounts. The largest source of contamination is fallout. Radioactive dusts may be deposited on the food and water left uncovered. The following are good rules of precaution:

Isolate all unpackaged foods that were lying where dust from ground bursts or mist from underwater bursts might have settled on them. Before opening canned or bottled goods, wash the outside of the containers thoroughly. That will remove most of the pollution that may have deposited on them. Also, be sure that all cooking utensils and tableware are scrubbed clean in order to remove any invisible, radioactive dusts. Food and utensils that were in closed drawers or tight cupboards which prevented the access of fallout will be all right.

Be careful of drinking water after atomic explosions. There is little or no chance that water actually inside household pipes at the time of attack will be made radioactive. If a little is drawn off right after the burst and placed in clean containers with covers, it should tide you over the immediate postraid period.

But even if the water continues running, don't keep on using tap water for drinking purposes unless you have received official information that the city system is safe. This is not only because of radioactivity, but because of other dangers like typhoid that can come from damaged water systems. If you have to use city water before you get official infor-

Supportable Risks of Beta-Gamma Activity in Water

Period Over Which Water Is to Be Consumed	Preferable Risk		Acceptable Risk	
	Curies per Cubic Cm.	Disintegrations per Min. per Ce.	Curies per Cubic Cm.	Disintegrations per Min. per Ce.
10 days.....	3.5×10^{-9}	7.7×10^3	9×10^{-8}	2×10^5
One month.....	1.1×10^{-9}	2.6×10^3	3×10^{-8}	7×10^4

mation, boil it. Boiling won't remove radioactivity, but the chances that your water supply will be radioactive are pretty slim.

The figures in the table at the top of the page summarize the supportable risks for beta-gamma activity in food and water immediately following a contaminating atomic explosion.¹

These levels of contamination are detectable with ordinary beta-gamma survey instruments.

GENERAL INFORMATION

All radiation is damaging and should be avoided wherever possible. In cases of disaster, radiation tolerances will be changed from peacetime to emergency tolerances; and the amount of exposure to radiation will have to be weighed against the benefits to be gained. If, however, the rules, regulations and directions which have been published by your Civil Defense organizations and those being sent out by radio during the disaster are complied with, the chances of survival will be greatly increased.

Alpha, beta and gamma radiation will not cause your foods, the water or yourself to become radioactive when you are exposed to them. Neutron type radiation may induce some radioactivity; however, everything within the neutron range will probably be damaged beyond repair and should be forgone.

The handling of people or objects that are contaminated with radioactive materials should be no different than handling of people or objects that are contaminated with any kind of dust that would be detrimental if taken into your system. You will not become radioactive if you handle people who have been killed or damaged by radiation. Decontamination is a modern word for scrubbing with soap and water. However, since they cannot be destroyed, radioactive material that is washed off the walls of buildings or off people should be disposed of in such a way that they can never find their way into the human system.

Water from deep wells which are covered and undamaged will be safe to drink, provided, of course, it was satisfactory before the disaster. If the water supply is contaminated in the watershed area but the water trickles through several feet of sand and dirt before going to your water purification plant, most of the radioactive materials will be removed. Household water softeners are also efficient in removing radioactive materials from water.

In regard to shelter and shielding from radiation resulting from the radioactivity in the fallout area, as long as we can prevent internal contamination we only need to consider the gamma radiation.

CONCLUSION

Radiological defense is one part of a comprehensive integrated defense system and requires a host of technical personnel for its success. In order to properly integrate it with the other phases of the defense planning, training, and mutual aid between individuals, communities, states and countries cannot be overemphasized. The survival of each individual depends a lot on how he conducts himself before, during, and after a disaster. Training is like an insurance policy in this respect, and the premiums should always be paid for ahead of time. We cannot take the risk of allowing our training program to lapse.

Department of Health, Education and Welfare, U.S.P.H.S., Room 447, Federal Office Building, San Francisco 2.

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Disaster Medical Care and Shelter

The Federal Program

W. PALMER DEARING, M.D., Washington, D.C.

EARLY THIS YEAR, President Eisenhower met with California's Governor Brown and four other state governors who comprise the membership of the Special Committee on Civil Defense of the Governors' Conference. This meeting with the top officials of the Federal Government, held at the initiative of this committee of governors, devoted an entire day to consideration of the need for and the means of providing fallout shelter for the people of the United States. The Secretary of State, the chairman of the Joint Chiefs of Staff, the chairman of the Atomic Energy Commission, the director of the Central Intelligence Agency and other Cabinet officers and agency heads by their participation in this conference indicated the importance not only of shelter but of the entire Civil Defense effort to our national defense.

The Secretary of State put it succinctly: "Our relations with the Communist world since World War II have made clear beyond a doubt that our search for equitable solutions and for a meaningful peace must be predicated upon a strong defense posture of our own. We must assume that weakness on our part, or merely the supposition on the other side that we are neglecting our military defenses, serves neither the cause of freedom nor justice. . . . A vital part of our military strength for peace must be an effective Civil Defense program which, in conjunction with our retaliatory capacity, creates a strong deterrent to possible enemy attack upon the United States. If, despite our earnest efforts at the negotiating table and our defense preparations, we should nevertheless be subjected to nuclear attack, Civil Defense and measures for fallout protection offer the most practicable and feasible means of saving the greatest number of lives. . . . Numerous studies have shown that such a program would give a substantial portion of our population an excellent chance of surviving and hence provide us the opportunity to continue the fight successfully. A capacity to retaliate will [thus] be reinforced by an effective capacity to survive. And only thus can our defense posture serve as a convincing deterrent. . . . There

Presented as part of a Symposium on Disaster Medical Care at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Director of Health Services, Office of Civil Defense and Mobilization.

• The role of the physician in event of natural disaster or overwhelming (perhaps nuclear) attack by an enemy is:

To assist the layman in preparing to meet his own health needs in a disaster situation until organized health services can reach him.

To prepare and plan for the provision of organized medical care when conditions permit.

To extend his own capability to render medical care outside his normal specialty.

To assist in the training of allied and professional health workers and laymen for specific mobilization assignments in health services.

is evidence that the U.S.S.R. is stepping up its civil defense program. Combined with a substantial program for air defense, it provides Soviet negotiators with a good deal of assurance that their homeland will be able to withstand attack. A similar assurance with respect to our own country would clearly strengthen our defensive position. . . .

"What I have said not only has serious implications for our own military and diplomatic posture; it applies to our NATO partners as well. We count on our NATO allies to remain firm in the face of any aggressive threats. An effective program of fallout protection will provide further support for their determination to do so. But if we expect them to take further measures to protect their own populations, we should not lag behind. . . . Any additional measures which we can take to minimize the fallout danger will reinforce our country's defense posture, and thereby, its political and negotiating strength."

I have quoted so extensively from Secretary Herter's remarks because he stated explicitly what our military and political leaders, and the President, know so well—Civil Defense is as vital to our national defense and the protection of our country and our institutions as is, for example, the deterrent capability of the Strategic Air Command.

There continues to be much discussing and deploring of the so-called "apathy" of the American people. Aside from the fact that what is called apathy is really ignorance, some people express a feeling of hopeless fatalism in the face of the enormous potential of nuclear destruction, and fall back on a psychological rejection of the whole melancholy business. A thoughtful friend of mine, in the course

of a discussion the other day of some of the newer knowledge of radiation effects, said, "I think I don't want to be around when it happens." Who does! But we need to stress and stress again that the crucial urgency of Civil Defense preparedness is to insure that "it doesn't happen." Civil Defense is more than a desperate last ditch effort for survival; it is an opportunity for every community, every citizen, to take positive patriotic action to strengthen the defense of his home and his country.

And I can say that fallout shelter for the population of the country is the single measure that would have the greatest effect in saving lives of the survivors of a nuclear attack. This may come as a surprise to you physicians, but it is true.

No less an authority than Congress's Joint Committee on Atomic Energy, following its hearings last summer on the biological and environmental effects of nuclear war, reported: "Probably the most significant finding presented to the Subcommittee was that Civil Defense preparedness could reduce the fatalities of the assumed attack on the United States from approximately 25 per cent of the population to about 3 per cent."

Announced on May 7, 1958, the National Shelter Policy has met with reasonable public acceptance.

The Federal Government's role has included the following action elements:

1. *Education*, with emphasis on facts about fallout and steps which can be taken to minimize its effects;
2. *Survey* of existing shelter, on a sampling basis, to demonstrate the value of existing structures in providing fallout protection;
3. *Research*, to show how fallout shelters can be incorporated in existing, as well as new buildings;
4. *Prototype* design and construction—a program of both research and demonstration;
5. *Leadership* and example, by incorporating fallout shelters in appropriate new federal buildings; and
6. *Incorporation* of shelters in existing federal buildings (not yet funded).

The Federal Government is broadly pointing the way. Next year's budget includes \$11.5 million for incorporation of fallout shelters in all new suitable civilian federal construction. The Federal Housing Administration and the Veterans Administration have revised their loan and loan insurance programs to include home shelters. The Public Health Service has made fallout shelter in hospitals eligible for grants under the Hill-Burton program.

In addition to the extensive work on design and techniques of providing shelter, both in the home and in large buildings and industry, the government is providing funds for the construction of prototype

shelters. Under this program, one 50-person community shelter will be constructed in Los Angeles and another in the San Francisco Bay area, a 100-person community shelter at Martinez in Contra Costa County, and a family shelter at Santa Rosa. Also, a \$200,000 Office of Civil Defense Mobilization (OCDM) shelter survey to determine and improve existing shelter potential will begin shortly in Los Angeles.

Home builders in various parts of the country, notably Denver, are constructing and selling homes with fallout protection built into, let us say, a recreation room. This increasing momentum, sparked by state action through the activities of the Governors' Conference which I have already mentioned, as well as by Federal Government action, is gratifying. Interpreting to the public the need for fallout shelter is a particularly appropriate role for you physicians, because of your natural place as community leaders.

But this is not your only role, even if shelter does have the greatest single life-saving potential. The saving of many lives and maintaining or restoring the health of the survivors of a nuclear attack will depend upon the advance preparation—organizing, training, practicing—that physicians and other members of the health community have made. There are good beginnings. Our national planning base has been firmly established with the promulgation by President Eisenhower in October, 1958, of the National Plan for Civil Defense and Defense Mobilization. The specialized annexes to the plan are nearing completion; the National Health Plan, Annex 18, has just been released. The American Medical Association's monumental report on National Emergency Medical Service, prepared under contract with OCDM, has been made available in quantity in condensed, highly usable form. The Public Health Service, under delegation from OCDM, is well under way with its program to develop plans, organization and training where Civil Defense readiness has to be developed—the individual community.

I should like therefore to describe the public Health Service program, as recently set forth by Dr. Carruth J. Wagner, Chief of its Division of Health Mobilization, at a meeting of the Committee on Disaster Medicine of the American Medical Association.

The immediacy and magnitude of the medical care and public health requirements are the basic problems created by any attack situation. Almost instantaneously, millions of casualties are in need of treatment. Not only is there a gross disparity between the available health resources—that is, manpower, supplies and facilities—and the medical patient load, but there is a corresponding disparity in all the supporting services, such as transportation, fire and rescue, communications, etc. Finally, the

radiological fallout in many areas will delay or prevent any organized medical activity for days or weeks. In short, we not only have inadequate numbers of physicians and amounts of supplies, equipment and facilities, but we lack the ability to relate even these limited resources to the patients in many cases because of fallout.

Our first role as physicians, then, is to make it possible for these patients to treat themselves—meet their own health needs—until local conditions permit us to treat them.

The American Medical Association recognized this problem and is collaborating in a self-help research project the Public Health Service is conducting under contract with OCDM. This will consist of a standardized procedures manual related to a standardized medical kit for use by the layman in self, family and neighbor care. In addition to general medical care, it will emphasize hygiene and sanitation, simple methods to be used in the treatment of shock, burns, fractures and hemorrhages, as well as simplified nursing techniques. All these necessary efforts have the purpose of preserving life until the physician can catch up with the patient load.

Once the methods to be used and the medical kit contents are agreed upon, the physician must take an active aggressive role in teaching the laymen to use them. We at the federal level can provide assistance to help the physician in this training responsibility. The Public Health Service can develop and provide training aids, it can support the assignment of personnel to the states and organizations within the limits of appropriations, and it can make its inactive reserve corps available for use at the local level.

The second role of the physician is to prepare for the activation of organized medical care as soon as radiation decays enough to permit personnel to work without too much risk. This role must be assumed now. The physician must actively participate and must provide the leadership necessary to the development of effective medical survival plans in every state and local community. A plan is worthless unless it is related to the resources available and the anticipated requirements for these resources. This means that every physician must have a mobilization assignment. He must know the command channel within the state and local community, and he must be fully prepared to accept his assigned role when the plan is activated.

The plan that he will put into effect must therefore be his plan. It won't be unless he actively participates in its development, revision and maintenance. He must contribute his expert knowledge and experience in determining how limited supplies and equipment are to be used; what treatment techniques are to be practiced in the management

of such conditions as burns, fractures and radiation injury; how rescue and transportation of the injured are to be carried out; he must participate in the training and development of teams of laymen and allied professional health workers who will have specific mobilization assignments in his community; he must participate with the state and local Civil Defense directors in solving the administrative problems inherent in any Civil Defense plan; finally, he must extend his own capability to engage in medical care and preventive health activities outside his normal specialty and daily practice. Every physician must be prepared to perform emergency surgical procedures, give an anesthetic, set up an emergency water system, institute communicable disease control measures, advise as to vector control, emergency sanitation and sewage disposal, and all other aspects of personal and community health services.

The government is prepared to assist the physician with many of these responsibilities. Through the assignment of personnel to each regional office and ultimately to each state, the Public Health Service hopes to develop training programs for the physician and allied health worker which will provide them with the methods and training aids they will need to do the job in the local community. The Public Health Service expects to make maximum use of its inactive reserve corps by giving them mobilization assignments and training in the communities where they reside and carry on their normal activities.

I have discussed the significance of Civil Defense preparedness and specifically fallout shelter to our national defense, and the responsibility of physicians as leaders in their communities to prepare themselves, their colleagues in the allied professions and the lay public to meet the survival health needs of themselves and their neighbors.

I want now in closing to urge you to join with us in carrying forward the program for personal survival which we are trying to impress on every American through every medium. The safety of Americans would depend entirely on these five fundamentals—which every citizen should know and take action on:

1. Warning signals and what they mean.
2. Your community plan for emergency action.
3. Protection from radioactive fallout.
4. First aid and home emergency preparedness.
5. Use of Conelrad—640 or 1240 on your radio—for official directions.

If we will assume our leadership responsibility as citizens and as physicians, we will do our part to keep the nation strong and to maintain the peace.

Director of Health Services, Office of Civil and Defense Mobilization, Washington 25, D. C.

Bacterial and Chemical Warfare

The Current Status

CECIL H. COGGINS, M.D., Sacramento

FOR THE PAST 14 years we have become so engrossed in the atomic bomb that we have lost sight of other advances in the art of warfare. We have forgotten that, while the physical scientists have been producing increasingly destructive weapons, the biologists and chemists have been equally busy. The result is that today we are faced with the possibility of war in which not one, but three terrible weapons may be used. Each one of these weapons is capable of producing mass casualties on a scale far beyond our previous experience and also beyond our present capacity to provide medical care.

While the destructive power of nuclear fission has become common knowledge, the real potentialities of biological and chemical warfare remain widely unknown. Unfortunately this is true, even among the medical profession, upon whose shoulders must inevitably fall the main burden of defense. This dangerous situation, in which we are expected to protect the public against weapons which are unknown to us, cannot be allowed to continue. We must become informed of the facts.

We were not taught in medical school how diseases can be deliberately produced in man nor how the atmosphere may be rendered lethally poisonous. Yet today, somewhat paradoxically, our national security demands that we know a great deal more about biological and chemical warfare than was previously thought fit for our ears.

CHEMICAL WARFARE

What are the facts about chemical warfare? In modern times war gases were first used by the German army against the Allies in 1915. We quickly retaliated; and before the war had ended, chlorine, phosgene, chlorpicrin, mustard and the arsenicals were in general use. Although these early gases were crude and the methods of delivery primitive, they nevertheless caused 1,300,000 casualties and, in doing so, proved to be five times as efficient as either shrapnel or high explosive shells.³ This was a clear warning of things to come, but forty years have now

■ For fourteen years public attention has been focused so sharply on atomic weapons as to lose sight of other, less spectacular but equally significant advances in the art of warfare.

In the shadows cast by brilliant research in nuclear physics are hidden startling advances in the field of chemical and biological weapons. These weapons, as now developed, are not only capable of producing mass casualties quite comparable with those of atomic bombs, but they also possess certain advantages which may make them the weapons of choice for an unscrupulous enemy.

If war should come, it is the medical profession which will have the sole responsibility for protecting the citizens of California against these weapons, and we can therefore delay no longer in acquainting ourselves with their potentialities and characteristics.

In this task, we are working under two serious handicaps. The first is that our classical medical training affords little appreciation of the real danger, and the second is the cloak of secrecy surrounding the entire subject.

passed, and each year has been marked by notable advances in chemistry.

After World War I a steady stream of new chemicals came from the laboratories, passed through the stages of research, development and large scale production and finally found a place in military stockpiles. Of these, distilled mustard, the nitrogen mustard series and Lewisite each boasted of a killing power twice as great as phosgene. In 1920, when they learned about Lewisite, the public wishfully concluded that war had at last become too frightful ever to occur again.

Equally important was the constant improvement in methods of delivery. The old fashioned candles, projectors and land mines gave way to new chemical artillery shells, grenades, mortar shells, aerial bombs, airplane spray tanks and finally to rockets. Nearly every projectile in the armaments of the world was adapted to carry chemicals as readily as explosives. It is an historical fact, and one of the most curious in all history, that World War II was fought to its bloody end by military forces, all of whom were afraid to use the chemical weapons in their possession.

But they were not forgotten. Even while fighting with conventional arms, the Germans developed the

³ Presented as part of a Symposium on Disaster Medical Care at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Assistant Chief, Medical and Health Division, State of California Disaster Office.

series of organophosphates now known as the nerve gases Tabun (GA), Sarin (GB) and Soman (GD). Twenty times more toxic than hydrogen cyanide, these gases were so deadly that they frightened Hitler. They had the power to cause casualties before they could be detected by the human senses; they were lethal after less than a minute of exposure and their liquid droplets quickly penetrated the skin.³

In the body, nerve gases react with cholinesterase irreversibly, thus permitting the accumulation of acetylcholine and, consequently, the continuous uncontrolled stimulation of the parasympathetic nervous system. The resulting spasmodic muscular contractions cause dimness of vision, respiratory difficulty, salivation, involuntary elimination and convulsions ending in death.

It is therefore easy to understand why, having captured the German Tabun plant intact, the Russians triumphantly moved it home to Russia, together with the top ranking German chemists and technicians. As a result, Tabun is now the standard Russian nerve gas and the present Soviet stockpile is estimated at more than 50,000 tons. To understand what this means, we need only note that this quantity is quite sufficient, under the usual conditions of gas dispersal, to wipe out the population of a thousand cities the size of San Francisco.

What have we done to meet this threat? Although the official United States policy has always been that we will not resort to lethal gas unless the enemy uses it first, we have tried to develop a retaliatory capability. Our standard nerve gas is Sarin (GB) and we built a plant at Rocky Mountain Arsenal in Denver for large scale production. However, this plant has since been shut down, partly because of complaints from Denver residents against the proximity of so deadly a munition. To replace the Denver facility, the Chemical Corps has now begun converting an Atomic Energy Commission plant at Newport, Indiana, for the manufacture of nerve gas—at a cost of 13.5 million dollars.

Whether we can overtake the Russian lead is now problematical. The chief of army research and development, Lieutenant-General Arthur Trudeau, admits that we are lagging behind and that we do not now have a counter-offensive capability.

The nerve gases are now standard equipment, but they are already twenty years old and soon they will be joined by more modern and even more deadly chemicals. Today there are, in advanced stages of development, not only war gases of much higher toxicity, but also an entirely new category of chemical weapons designed, not to kill, but to incapacitate. These weapons fall into two groups: Those which produce temporary physical disability such as blindness, paralysis or deafness; and those which cause

temporary mental aberration. The great strategic advantage offered by gases that are capable of liberating captured cities while, at the same time, sparing the lives of friendly civilian populations, has given new impetus to chemical warfare research on both sides of the Iron Curtain.

One of the most promising of the new psychochemicals is lysergic acid diethylamide, derived from the ergot fungus. Another is mescaline from the peyote cactus. A third is psilocybin, found in the vision-inducing "divine mushroom" of Mexico.

Preparations of these and other agents are available either as powders or liquids. The liquids can be sprayed into the air to form aerosols which spread across the ground like a fog. Physiological effects are the same whether the new substances are breathed, swallowed or injected parenterally. They variously produce hallucinations, depression, apathy or senseless elation lasting from 12 to 24 hours. The ability to integrate time and distance is lost. The aviator cannot fly a plane and the soldier cannot aim a gun.

These new agents, called by the soldiers "loony gases," have already been tested on a large number of human volunteers. Troops exposed to one of them were not even conscious of their abnormal condition, which was so changed that they were unable to follow simple commands or to perform normal tasks with acceptable accuracy. Only an outsider, not exposed and observing them, could recognize their behavior as eccentric and erratic.³

The Russians are well aware of the possibilities inherent in the psychochemicals, and they will certainly be redoubling their efforts to be first in the field with fully operational munitions. Soviet Major General Yu V. Drugov, of the military medical service of the Red army, recently stated, "Special interest attaches to the so-called psychic poisons mescaline, methedrine and lysergic acid derivatives which are now used for the simulation of mental disease."³

Such cautious statements do not reveal the full extent of Russian readiness to wage chemical war. Their total military forces number over 8 million men in more than 400 divisions. Each division has a unit devoted to chemical warfare, with chemical troops assigned to all echelons down to the battalion level. Their chemical weapons are modern and effective, and so is their protective equipment. Their stock of war chemicals is enormous, comprising fully 15 per cent of their total military munitions.

The entire population of the Soviet Union is deadly serious about chemical warfare. Their civil defense organization, DOSAAF, requires 22 hours of instruction, plus practical exercises, for all adults between the ages of 16 and 60. Protective masks are sold at government stores throughout the coun-

try. Thirty million Russians have completed their training and now wear the qualification medal. For more details on Soviet preparedness, I refer you to House Report 300 of the 86th Congress, filed by the Committee on Government Operations.¹

BIOLOGICAL WARFARE

Let us briefly consider biological warfare. This is defined as the intentional use of living organisms, or their toxic products, to cause death, disability or damage to man, his domestic animals or crops.

In learning the truth about biological war, the civilian physician labors under very serious difficulties. Up to the present, he has not been permitted to share the knowledge which his military colleagues have learned in secret. At the same time, his habits of thinking, moral convictions and humanitarian instincts all combine to produce in his mind a strong antipathy for the subject. This antipathy commonly expresses itself in indifference or disbelief.

It must be clear, however, that if we are to defend against biological agents, we must know their capabilities. This has been the underlying purpose of the intensive program of biological warfare research which has been carried out in this country for the past 17 years. Under the Army Chemical Corps, research and development is centered in the permanent laboratories at Fort Detrick, Maryland, but collateral investigation has been done in many other laboratories by hundreds of our leading bacteriologists. Their laboratory findings have been tested by field trials under a great variety of conditions. The results leave little doubt of the enormous potentialities of disease when used as a weapon of war.

However, in order to appreciate the power of these weapons, one must first understand how they will be used. Perhaps the most effective method of biological attack is by means of an aerosol. Today, aerosols can be delivered to any point on the earth's surface by generators incorporated into aerial bombs, airplane spray tanks, submarine mines and guided missiles. These generators consist basically, of containers of highly concentrated slurry of bacteria, viruses or toxins, fitted with fog nozzles, from which the contents are sprayed into the air under pressure to form a fine mist. Spreading rapidly downwind, the mist quickly becomes invisible. Under neutral or inversion conditions, 50 gallons of slurry is capable of blanketing an area of 60 or more square miles with a high concentration of infectious particulates.²

Trials have repeatedly shown that the cloud penetrates every building, even when not assisted by air circulation systems. The smaller particles diffuse through structures in much the same manner as a gas and many secondary effects occur, such as the

widespread contamination of kitchens, restaurants, food stores and hospitals.²

If, at this very moment, such a cloud were released over Los Angeles, we would have no choice, if we continued to breathe, but to take into our lungs large numbers of virulent organisms. It is obvious that the consequences of such an attack would not be influenced in any way by the high standards of our Public Health Services, but instead would depend entirely upon the enemy's choice of agent, the dose inhaled and our own individual resistance to the infection.

In the process of verifying the feasibility of such attacks, a great number of research problems have been encountered. They have had to do with the selection of the proper agent for the immediate effect desired; the large-scale production, storage and mechanical delivery of high concentrations of agent; the protection of living agents against unfavorable meteorological conditions during delivery, and finally, the assurance that a sufficient number of particulates of the optimum size can be successfully lodged in the alveoli of the lungs.

We have found none of the problems to be insuperable and it must be assumed that the Russians, who have been doing such research six years longer than we, have come to the same conclusions. Indeed, in a lecture given three years ago, Colonel Adam Milkovich of the Moscow Institute stated, "In a practical sense, the question of the possibility of the use of biological warfare weapons in future wars is not considered today a subject open to debate, for it is known that an enemy can successfully attack human beings, and even animals and plants, with biological agents." And he added, "From results of comparative studies of the losses of life from conventional weapons, war poisons and atomic energy on one side, and losses from biological weapons on the other, it is believed today that a biological war would have the greatest effect of all."⁴

Let us consider what agents an enemy might use in such a war. His choice would be influenced by a number of factors. Among these are: The effect desired, whether early death or disabling illness; the incubation period; prevailing weather conditions; target population susceptibility; persistence of contamination and the possibility of retroactivity. Regardless of prevailing conditions, from his wide spectrum of available agents, an aggressor should be able to select several which would meet his requirements.

Among the bacterial diseases, anthrax, plague or glanders would be expected to produce a very high mortality, while brucellosis, tularemia and bacillary dysentery would disable for a considerable period. The rickettsiae would offer typhus for high mortality, with Q fever and Rocky Mountain spotted fever

able to seriously obstruct defensive efforts. Similarly, the viruses of psittacosis, equine encephalitis, influenza and even variola could reasonably be expected to override existing immunities to harass and hamper the defense.³

In visualizing the many possibilities, we must constantly keep in mind that we are not talking about these diseases as they naturally occur. On the contrary, we are describing the military exploitation of massive amounts of highly infectious agents, introduced through unusual portals of entry.

Many agents are much more toxic or infectious when they enter the lungs than by the natural portal. The alveolar bed is highly susceptible to infection—entrance to the alveoli amounts almost to intratissue inoculation. Botulinal toxin, for example, is several thousand times more toxic by this route than when it is swallowed. Tests on human volunteers show that the median infective dose for man in *Coxiella-burnetti* aerosols is one billionth of a gram of embryonated egg material.² The high mortality of primary plague pneumonia is well known and a number of other organisms are in the same category.

Although the diagnostic problems presented by the atypical diseases resulting from aerosols may prove to be difficult, nevertheless it is we who will be called upon to solve them.

DEFENSE

I do not wish to leave you with the impression that defense is impossible. On the contrary, defense against both biological and chemical weapons is both feasible and practicable by means which are known and which need only to be put into operation.

Our national government, through the Office of

Civil Defense Mobilization, is now initiating a public information program dealing with chemical and biological weapons. Defensive measures to be taken are outlined in the recently issued National Biological and Chemical Warfare Defense Plan (Annex 24) to the National Plan for Civil Defense and Defense Mobilization. Biological and Chemical Warfare defense equipment is being distributed to federal, state and local agencies. One month ago, California was allotted 320 chemical protective equipment sets, including 2,560 gas masks, for training purposes. Plans call for a civilian gas mask to be placed on the market this year.

It is the local governments, however, who have the responsibility for education and training and for perfecting their Civil Defense organizations. As citizens, we are part of our community Civil Defense effort, and, as physicians, we are responsible for the medical aspects of our Civil Defense. With greater awareness of these responsibilities and with the active participation of every doctor, the job will be done.

Medical and Health Division, State of California Disaster Office, P. O. Box 110, Sacramento 1.

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Films for C.M.A. Annual Session Film Symposia Requested

The previously successful film symposia presented during the California Medical Association annual sessions will be repeated in 1961, April 30 to May 1.

Daytime symposia, each one to center around one specialty, are now being planned for the physician. General programs for doctors, their wives, nurses and ancillary personnel will be presented during the evenings.

There will be a moderator and outstanding physicians, preferably authors, as discussants on each symposium.

Authors desiring to show their films should notify Paul D. Foster, M.D., California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

Deadline: December 1, 1960.

Disaster Care for 15 Million Californians

HAROLD G. ROBINSON, Sacramento

THE California Disaster Office has long been appreciative of the fact that the medical profession, busy though it is with its urgent daily business, has found time to become a bulwark of our state's program of nonmilitary defense.

No profession has contributed more time to public service, nor responded more willingly and effectively to government's appeal for cooperation in survival planning.

I will touch upon three complex and vital phases of the involved question of disaster care for the third largest state in the United States. First, I will outline the need for disaster planning in a broad sense. Second, I will summarize what the California Disaster Office has done about this challenge, up to now. And third, I will describe my own particular prognosis for the future of the program—something that can be achieved only with your continued, and superlatively effective, cooperation.

Quite apart from the merits of nonmilitary defense, its proponents are forced to spend a large part of their time seeking greater public acceptance and justifying their existence generally. This can be a vexing proposition. At times when I have entered my office in the morning I have felt like the physician who greeted one of his most persistent patients, a tireless hypochondriac, with the question: "Well, Mrs. Adams, what do you think is the matter with you this morning?" And she replied:

"Doctor, I hardly know. What's new?"

Our problems have often seemed to turn up with the same unflinching regularity. Often we find that the answers for the doubting Thomases are not easily produced. For my own part, I have occasionally felt sympathetic about the medical student whose instructor had just exhibited a diagram and said:

"The subject here limps because one leg is shorter than the other."

The instructor then asked the student: "Now, Mr. Sneed, what would you do in such a case?"

The student pondered earnestly. Finally he replied with conviction:

"I have an idea, sir, that I should limp, too."

Now, those who have been engaged in nonmilitary defense over a period of years are familiar with the

• The urgency of the crisis following a nuclear attack staggers the imagination. We would have thousands or millions of survivors making a desperate struggle to survive. Safe water supplies and waste-disposal systems would be gone. In some areas, there would be little or no food or shelter.

Yet California has already manned a medical arsenal that is second to none in the United States. We have stored 115 emergency hospitals at strategic points, and through the county medical associations we have appointed cadres including physicians, nurses and technicians. Plans have been made for workers who will assist in setting up the hospitals and first aid stations.

In our future operations we will continue to place strong emphasis on the medical phase of our program of disaster care.

The program would be just as essential in the event of major natural disaster as nuclear war.

Our objective is a simple one. We are seeking to preserve the human resources which are necessary for recovery.

California's medical profession, with the allied professions of nursing and technical skills, has a vital interest in continuing operations to the maximum extent even under the most trying conditions.

fact that it is an absolutely essential component of our structure of state government, and of our total national defense. We recognize that we still must win over the skeptics so that we can accomplish our objective of protecting the whole and growing population of California.

Nonmilitary defense as we know it today came into being several years after the close of World War II. Since the detonation of the first nuclear weapons—an event which brought the potential of war to the doorstep of every American—the need for the program has steadily heightened.

We of Civil Defense have witnessed the horrors of test nuclear explosions. We have seen the potential for destruction so vast and so terrifying as to numb the senses. We know the death-dealing swath that radioactive fallout can cut through our civilian population, unless adequate precautionary measures are taken. We know how completely our everyday life would be disrupted in the event of nuclear war.

Just as certainly do we know that man can survive these horrors—but only if he is prepared. Preparedness starts in the home—in every American home. To survive as a nation, our people must first be prepared to survive for themselves.

Presented as part of a Symposium on Disaster Medical Care at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Until his resignation, July 1, 1960, the author was Director, State of California Disaster Office.

Thus, in essence, the deterrent strength of America lies in the preparedness of its people. The civilian population must realize that we cannot rely in this thermonuclear age on military protection alone. The role of the military in the total defense of the United States is to meet and defeat the enemy. Our only logical conclusion today is that military assistance can complement—but it cannot substitute for—civilian participation in Civil Defense.

At the same time, a state with the topographical, geographical and sociological complexity of California must have a positive, working program of protection against natural disasters.

That is the reason for the existence of the California Disaster Office.

I would like to give you a thumbnail description of some of the work that has been done by the California Disaster Office—a record of which every Californian has reason to be proud. This is not a self-serving statement. The accomplishments could not have been made without the dedicated leadership and assistance of such top-level professional groups as the California Medical Association.

On that subject, I am sure that you are aware that the state's program of disaster care has been called the most progressive in the nation. I have that word from the very able chairman of our Emergency Medical Advisory Committee, Dr. Justin J. Stein. And I have on my own cognizance a personal knowledge of the outstanding work being done by the respected Chief of our Medical and Health Division, Dr. Frank Cole; his dynamic assistant, Dr. Cecil Coggins; and their effective staff.

Thanks to them, and to you, California leads the nation in its program of disaster care. Already, we have stockpiled more than \$4 million in medical equipment and well over \$1 million in radiological equipment, throughout California.

Thanks to them, and to you, the majority of the 17,000 members of the California Medical Association have a definite assignment in the event of a disaster.

Thanks to them, and to you, medical staffs all over the state have been trained in the operation and use of our 115 emergency hospitals, hundreds of thousands of blood procurement sets, 50 sanitation units and 680 first aid stations.

Since you are thoroughly familiar with the medical program, let me just mention a few of the other areas in which the program of the California Disaster Office has stored the hardware and trained the bodies in its operation.

Our Division of Public Safety has contributed immeasurably to the Fire Service's system of mutual aid. Seeing the need for improved fire communications in our sprawling state, the Division designed

and is having built fire communications units which receive full support from the local fire agencies. Local departments are enthusiastic about the 100 state-owned pumpers which we have placed in their custody.

In addition to its other pioneering accomplishments, our Radiological Defense Division has trained 22,000 Californians in monitoring—far and away the largest number trained by any state.

Our Emergency Operations and Programming Division is in large measure responsible for California's first complete Civil Defense Operations Plan, now being used by the Federal Government as a model for other states. The plan was published in March of last year. Since that time, more than 20 state agencies have completed or are close to completing integrated disaster plans. Hundreds of local government agencies are engaged in the same task—with some of the integrated local plans already completed.

Our Equipment and Federal Assistance Division has made it possible during the last eight years for state and local agencies to receive \$13.2 million in matching funds in order to improve their nonmilitary defense capability. By the same token, the state, the counties and cities since 1956 have purchased surplus property worth \$18.5 million at a cost of \$1.1 million.

Our Emergency Communications and Warning Division has made accomplishments of national stature in the development of Conelrad, the emergency broadcasting system required by the Federal Government. It has set up an efficient warning system as part of the total defense pattern. And it has developed and built a mobile communications system of complex nature which is deemed by some experts to be the best of its kind in the United States.

I have already mentioned the medical hardware—the equipment which we have acquired from the Federal Government (chiefly at its expense) and placed in the custody of local agencies. A moment ago I referred to our emergency communications units and the state's 100 fire pumpers. This protective arsenal also includes 29 rescue trucks, 105 radiological monitor trailers, 16 mobile radiological laboratories, more than 10,000 radiological instruments, 265 bell and lights receivers in our warning system—and more. I mention these items to give you some idea of the way in which the Disaster Office spends its time.

In this phase of our work, then, we can point to a degree of success. In the broader phases, however, you know and I know that we have just begun.

The question of public acceptance of nonmilitary defense is one of our thorniest problems. It is one that we will grapple with until we have overcome it.

Much has been done in California to lick the problem. The governor has given us outstanding leadership. He has traveled to Puerto Rico and to Chicago serving as a member of the Governors' Committee on Civil Defense, of which New York's Governor Nelson A. Rockefeller is the chairman. He has reactivated our advisory committees, and personally has instructed them to lend us their full assistance.

In addition, we have formed a committee of publishers and broadcasters which lends us wholehearted cooperation. We have accelerated the flow of news releases and scripts, and have prepared new exhibits which have been well received. Yet praiseworthy as this effort is, we are the first to recognize that it is not enough.

Still to be achieved is public recognition that in today's world there are reasons for having a program of Civil Defense.

We are not warmongers. Unequivocally and totally we reject the accusation that Civil Defense helps to set the climate for war, or that it is any more an invitation to nuclear disaster than your automobile insurance policy is an invitation to an accident.

The people of the United States share with the people of other nations the dream of a lasting peace. We have gone so far as to base our \$40 billion annual budget for military defense on purely retaliatory concepts. In other words, we have accepted the premise that the first blow will be taken by the United States.

Gone is the day when we could rely on oceans and allies as shields to enemy attack. The modern aircraft and guided missile, reaching out hundreds and thousands of miles, have crushed this shield. If the United States should be attacked, there would follow a struggle for survival—both civil and military—of the grimmest nature. This struggle would be unparalleled in history. It would demand all our strength and all our resources if we hoped to survive the initial attack and strike back.

Under those circumstances, we are left with two major reasons for the existence of a vigorous program of nonmilitary defense. We need to exert the deterrent power upon the enemy. And, should those efforts fail, we must be prepared to pick up the pieces and rebuild.

It would accomplish little, for example, to save people from the direct or fallout effects of nuclear weapons if they were subsequently to starve or die for lack of medical attention.

At this point in history, no man can estimate how imminent the nuclear holocaust may be. Strong criticism of our defense policies has been voiced by some who believe we are falling behind in the race of armaments. I have no intention of dealing with that question in these remarks, beyond stating my

own conviction that a nation's strength must be measured in terms of economic and educational goals, as well as its arsenal of warheads.

The success or failure of our international policy does depend in a very critical measure, however, upon our own attitude toward preparedness of civilians and civilian agencies for dealing with unprecedented nuclear disaster. For that reason I have grown increasingly impressed, of late, with the homely statement that when Noah built the ark, it wasn't raining.

In our search for a peace formula that will adapt to our perilous times, we must be realistic no matter how distasteful or unglamorous the task appears. Our tasks in Civil Defense are not glamorous. You have my word for it that they are often unrewarding. Many people claim that we are playing games for eventualities that may never materialize. Thus, they argue, we are wasting time and money. I hope they are right—for I firmly believe the alternative could be total destruction.

What we are doing is buying insurance to take care of an attack involving advance planning as the prime means of survival. I often observe the firemen in my neighborhood, sitting around waiting for a fire that may never happen. This does not disturb me. I am happy in the knowledge that vigilance and preparedness are waiting to put out the fire of war that we devoutly hope will never come.

Basic to a just understanding of the need for Civil Defense is one glaring fact: We are not setting up a corps of men in arm bands who will spring to our defense and protection when the siren sounds. Instead, we are using the time, blessedly given to us—this period in the cool gray of the morning, pre-attack—to build in to our existing agencies—fire, law enforcement, medical and so on—the ability to take care of citizens in a terrible situation for which there are no guide lines in all the history books on all the library shelves.

We need your continued staunch support. Make no mistake about it—you are among our most valued allies, for you have already acquired the professional training and the skills. Under disaster conditions you would continue your day-to-day discharge of Hippocratic principles. But you would be working under the most challenging and trying circumstances in helping to alleviate suffering and rebuild our nation.

The urgency of the crisis following a nuclear attack staggers the imagination. We would have thousands or millions of survivors making a desperate struggle to survive. Safe water supplies and waste-disposal systems would be gone. In some areas, there would be little or no food or shelter.

Only with the assistance of trained professional men and women, including in a very important

sense the men and women of the California Medical Association, could we even hope to spring back.

California's medical profession has its own vital interest in continuing operations to the maximum extent, even under the most trying conditions. You would be playing an essential part in all operations designed to help our state survive, recover and return to the way of life in which we believe so devoutly.

Our program for the future must include all actions which would make it possible for us to assist and care for the survivors of an attack or disaster; preserve civil government as we know it, and want to keep it; make maximum effective use of the remaining material resources; and merge the manpower and resources left to us, under the leadership of civil government, into an effective attempt to achieve our national objectives.

It is reasonable and logical that nonmilitary defense should continue to be your working partners. You are laboring unceasingly to eradicate disease.

We are laboring to achieve a prepared public and governmental structure. As you reduce the prevalence of the killers, you mark new progress for mankind. As we succeed in dispelling public indifference to the need for a survival program, we add to the strength of our state and nation.

In that sense, we hope one day to share with the medical profession the incomparable accolade given to you by Lord Bryce: "Medicine is the only profession that labors incessantly to destroy the reason for its own existence."

In closing, may I sum up as follows:

If a citizen demands wise government, he must recognize that wise government is the product of an intelligent citizenry and nothing else.

If a citizen demands that his country protect him, he must cooperate unselfishly in giving his time and money to maintain the institutions which afford that protection.

California Disaster Office, P. O. Box 110, Sacramento 1.

What the Surgeon Ought to Be

The conditions necessary for the surgeon are four: first, he should be learned; second, he should be expert; third, he must be ingenious; and fourth, he should be able to adapt himself. It is required for the first that the surgeon should know not only the principles of surgery, but also those of medicine in theory and practice; for the second, that he should have seen others operate; for the third, that he should be ingenious, of good judgment and memory to recognize conditions; and for the fourth, that he be adaptable and able to accommodate himself to circumstances. Let the surgeon be bold in all sure things; let him avoid all faulty treatments and practices. He ought to be gracious to the sick, considerate to his associates, cautious in his prognostications. Let him be modest, dignified, gentle, pitiful, and merciful; not covetous nor an extortionist of money; but rather let his reward be according to his work, to the means of the patient, to the quality of the issue, and to his own dignity.

—Introduction to the General Chapter, *Ars Chirurgica*, 1363; first printed edition at Lyon, 1478; first English edition, 1541; GUY DE CHAULIAC (c. 1300-68).

Submitted by ALBERT FIELDS, M.D.

Preparation for Disaster in California

FRANK L. COLE, M.D., Sacramento

UNDER THE Civil Defense Operations Plan which was recently completed and published by a group of planners employed under contract with the Office of Civil Defense Mobilization (OCDM) and working in the State Disaster Office, the medical and health plans are very distinctly and intelligently set forth. With this plan, the operational concept is:

1. Practicing medical and health personnel will be augmented with other personnel who have medical and health experience.

2. Existing medical facilities will be expanded for emergency operations. Civil Defense emergency hospitals will be activated and other facilities converted to medical use.

3. The scope of Medical and Health Service operations will be governed by the basic courses of survival action, such as warning time and the number of casualties. This action is divided into four larger phases as follows:

Strategic Warning. During this phase Medical and Health Service in danger zones will assist in the dispersal of infirm and hospitalized people together with critical supplies and equipment to support areas. Services located in support areas will mobilize to the extent necessary to provide medical care for evacuees.

Alert Signal (yellow). During this phase Medical and Health Service in danger zones will take action in accordance with local Civil Defense plans. In the process of dispersal, the requirements for medical care are primarily associated with evacuees. Emergency first aid will be available in traffic diversion and other service areas. Sanitation procedures will be established in all these areas where numbers of people have congregated. Residents of support areas should be prepared to provide home care for the ordinary sick and injured but should refer real emergencies to the Medical and Health Service.

Take Cover Signal (red). During this phase, Medical and Health Service personnel will seek refuge and cover, the same as other personnel. Medical personnel will render what emergency medical treatment they can to people in refuges.

- The operational plan for medical preparedness in California is divided into three main divisions, viz: Expansion of existing medical facilities, augmentation of practicing health personnel, scope of service expected.

Medical and health personnel and facilities will be expected to modify and adjust their care of casualties according to the situation present such as strategic warning, alert signal (yellow), take cover signal (red), and the post-attack period.

This service is concerned with conservation of resources (human) and must do everything possible to return people to a status where they can help rebuild our nation.

Supplies already obtained and stored throughout the state consist of first aid stations, emergency hospitals, blood procurement equipment, sanitation units.

Over a half million first aiders and more than 96,000 home nurses have been trained by the local chapters of the American National Red Cross.

Post Attack. The greatest demands will be made on the Medical and Health Service during this phase. Initially, medical and health operations will be conducted on a minimum care basis. This, however, will require a tremendous amount of medical treatment and care. As the situation clarifies and conditions permit, more definitive medical care will be provided and better health standards will be established. The objective is reestablishment of normal medical and health services as soon as possible. Following an attack the two principal functions of the Medical and Health Service will be to provide (a) first aid for sick and injured in the affected areas and the subsequent evacuation of patients, and (b) medical and health care for the surviving population.

Following an attack the Medical and Health Service will stress:

- (a) Priority treatment for the less seriously injured.
- (b) The release of all hospital patients except the most seriously ill.
- (c) Hospitalization of new patients only as a life-saving measure.
- (d) Strict control of blood, critical medical supplies and food for patients.
- (e) The enforcement of sanitation measures.

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Chief of the Medical and Health Division, State of California Disaster Office.

- (f) The control and treatment of communicable diseases.
- (g) Provisions for immunizations where indicated and practicable.
- (h) Segregation of certain infectious and contagious diseases.
- (i) Strict supervision of food handlers and water supplies.

When possible, individual care related to public health and morale will be initiated. Such services as psychotherapy, plastic surgery, physical therapy, prosthetics and other nonemergency services will not be provided pending the rehabilitation phase of the operation.

Medical installations such as first aid stations, emergency hospitals and auxiliary hospitals will be closed as rapidly as the need for them no longer exists to the point where fixed hospitals can provide the required care.

The conservation of all resources is important, but the conservation of our human resources assumes paramount importance if we are to survive as a nation after an all-out attack. Buildings, roads and bridges can all be repaired and rendered as good as new. But to replace a well educated and experienced human being requires not a few months but approximately 30 years. Even to replace unskilled laborers will require from 16 to 18 years. Therefore, the Medical and Health Service, in dealing with such resources, becomes one of the most important in Civil Defense.

Under administrative orders from the Governor's office, three of the state departments become intimately associated with the Medical and Health Service in time of extreme emergency.

1. *The Department of Public Health* becomes the Medical and Health Service. The director of the department becomes the chief of the Medical and Health Division and all of the available resources of that department are available to this division.

2. *The Department of Agriculture* has been delegated the responsibility of identification and protection of animals and plants exposed to A, B, C warfare efforts and decontamination supervision under certain conditions.

3. *The Department of Mental Hygiene* has been given the responsibility of assisting the Medical and Health Service in every way possible consistent with the resources available for essential activities.

Following is a resumé of what the Medical and Health Service has done to prepare for the conservation of human resources:

Supplies

In the California Civil Defense and Disaster Plan, one of the duties of the Medical and Health Division

is to procure and store medical and health equipment for use in case of either natural or war-caused disaster. In this connection, we have procured 680 first aid stations. These have been made into units, crated, boxed and stored in various strategic locations extending from the Oregon border to the Mexican border and the full width of the state. With each one of these stations the assigned personnel is capable of handling from 600 to 1,000 patients per day. Originally these first aid stations were stored principally in the critical target areas. However, it was soon found that this was not a logical place in which to store them and most of the stations were moved to other locations. Now only a few stations remain within each target area, and they are there for ready availability in case of natural disasters such as fires and earthquakes.

We have procured 130 Civil Defense emergency hospital units which are also stored in various locations throughout the state, but mainly in regions surrounding the critical target areas—the San Francisco Bay Area, Los Angeles area and San Diego area. Each of these hospitals, when fully manned, is capable of handling 200 to 500 patients per day or more, depending on the availability of additional beds and bed space in the immediate surroundings. Each one of these hospital units is complete in itself and is designed primarily as a surgical hospital. Each contains equipment for three operating rooms, sterilization equipment, a self-powered x-ray and developing machine, laboratory equipment, a water tank capable of holding 1,500 gallons of water, together with a gas operated generator capable of furnishing electricity to light the hospital in case the normal utilities are out of operation.

Likewise, 378,000 blood procurement units are stored at various places throughout the state, but mostly in the larger blood banks. There are 15 of these large blood banks, three of them operated by the American Red Cross and 12 by the California Blood Bank Association. In addition to these there are many smaller blood banks that are operated as private units or in connection with hospitals. The operating blood banks of the state have on file the names and addresses of a large number of donors with blood of all types. In case of emergency the type of blood which would be required for the first 24 to 48 hours or longer, would be Type O, which is the universal type. We feel confident that if we made an appeal on the radio or through the press or any other news media, that we could get hundreds of Group O donors in a very short time. We know positively that in the correctional institutions of the state are a large number of inmates who have been typed and who will readily give blood upon any occasion. This has been proved time and again by the Red Cross and other blood drives in the past.

There are 50 sanitation units stored throughout the state. These are self-powered chlorinating units which are used for purification of water. They have been used many times in the past few years and we know that they are operable and efficient.

Training

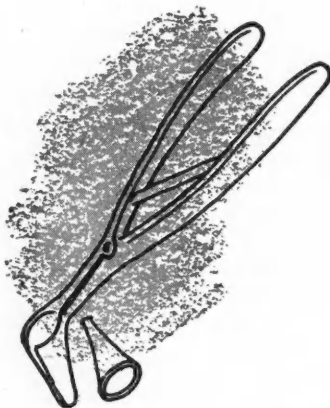
For several years this division was very much concerned about training first aiders and home nurses. However, this problem has been pretty well settled by the various chapters of the American Red Cross throughout the state. Since 1951 over 656,333 have been trained by the Red Cross chapters and have been given certificates of proficiency. This is a tremendous reservoir of first aiders. For a time we endeavored to assign these to various first aid units, but because of the moving about of people and the tremendous bookkeeping involved, this procedure was given up. Now we are relying on a course similar to that which we would use for the procurement of blood—appeals for first aiders to report to various stations for duty. In a similar period 96,000 home nurses have been trained and over 14,405 registered nurses have been given courses in disaster nursing.

Many rather extensive exercises have been held throughout the state by various sections of the Medical and Health Service.

Hospital Disaster Plan

For several years efforts were made to get the hospitals in California to develop hospital disaster plans. In 1951 very few had plans of any kind, and most of the few that were in effect were impractical. Through the efforts of the Medical and Health Division, the California Hospital Association, the American Hospital Association, the American College of Surgeons and the joint Commission on Accreditation of Hospitals and various other national organizations, requirements were written which are now in effect. These requirements are that any hospital in the State of California seeking accreditation by the Joint Commission must have a workable hospital disaster plan and this plan must be put into effect at least once a year. One might ask why hospitals need a disaster plan, since they are constantly being faced with results of disasters; but the difference between what they are faced with daily and what they will be faced with during a war-caused or large natural disaster is in the magnitude of the effort. We do not look for any new diseases or any new types of injuries in an all-out disaster, but we do look for a tremendous increase in the number of casualties, which in itself would overwhelm any organization that did not have a well organized disaster plan.

Chief, Medical and Health Division, California Disaster Office,
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Disaster Medical Care

The Objectives of the A.M.A. Committee and the Organization Of a County Society Program

WAYNE P. CHESBRO, M.D., Berkeley

THE GUIDING UNIT and the spokesman in the work of the American Medical Association in disaster medicine is the Council on National Security. The Council on National Security is an appointed council charged with the study and planning of all measures relative to medical manpower, both military and civilian, that is available for immediate and reserve use in the event of large scale local disaster or in the event of total warfare. Also included in this category are all the health services furnishing support to the effective operation of medical personnel.

For purposes of maneuverability and division of labor, the Council has two working committees, namely, the Committee on Military Affairs (nine members) and the Committee on Disaster Medical Care (eight members). We will discuss only the Committee on Disaster Medical Care. The members of this committee were selected without regard to geographical representation. Selection was on the basis of outstanding local work in medical Civil Defense, as related to preparations for total warfare.

Objectives of the committee are to promote medical disaster planning from the national level by:

1. Informing the individual physician of the latest developments of medical disaster planning and care, and by disseminating such information by correspondence, medical publication, assembled meeting and the lay press.
2. Assisting state and county medical societies with medical disaster planning and care, when so requested.
3. Continuing and expanding present cooperation and liaison with appropriate Federal Government agencies and other national associations relative to national level planning; and
4. By informing the general public of the development and progress of medical disaster planning and care, in order that there be instilled in the population a sense of medical security in event of large scale local disaster, and a sense of possible survival care in event of total disaster.

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Chief, Medical and Health Services, Region II, State of California. (Mendocino, Sonoma, Lake, Napa, Marin, Solano, San Francisco, Alameda, Contra Costa, San Mateo, Santa Clara, Santa Cruz, San Benito and Monterey counties.)

The functions of the committee have steadily increased from year to year, as the problems of disaster medicine have made themselves more apparent. Current functions are as follows:

1. Since 1949, the committee has sponsored the Annual County Medical Societies Conference on Civil Defense. This is held as a two-day conference, usually on the first weekend of November in Chicago. Subjects are presented by national authorities in their respective fields, and range from the latest information on fallout patterns, to more down-to-earth everyday reviews of large scale local disasters from man-made or natural causes. Workshop discussions of the final results of trial exercises contribute much to the knowledge of the participants. This year the tenth annual conference resulted in a record attendance of 270 officials of state and county medical societies and other medical and allied personnel active in Civil Defense. Thirty-three states and Canada were represented.
2. Since 1953 the committee has sponsored the annual one-day Conference on Civil Defense of the American Medical Association at the annual meeting of A.M.A. This year's meeting had 300 in attendance, representing some 40 states.
3. Since 1950 the committee has sponsored effective liaison with all federal agencies. Examples of the results of this liaison were (a) an endorsement of the post of Assistant Director of Health in the Office of Civil Defense Mobilization (OCDM), which gave effective voice to medical policy; and (b) an endorsement of the plan of the Department of Health, Education, and Welfare to use the established facilities of the USPHS to implement medical disaster planning for OCDM on a national basis.
4. In 1957, on contract with the then FCDA, Federal Civil Defense Administration, the committee produced, after much research and development, a national plan for disaster medical care in the event of total warfare. This plan was completed in April of 1959.⁴
5. The committee participates in the joint committee evaluation and study of the program in the medical schools, termed Medical Education for National Defense, which supplants the former Medical ROTC. This course indoctrinates the medical student

during his class days in the principles of disaster medicine.

6. The *Civil Defense Review* is published by the committee. It has a circulation of 2,000. Compiled in it are all current and pertinent information relative to medical disaster planning and events in the United States.

7. Also the committee holds biannual meetings with the chairmen of state medical society disaster committees and the respective state medical disaster directors. These meetings are held in the representative OCDM regions. Through these most important meetings the committee seeks to determine the particular needs and problems of each state medical disaster committee.

As your western representative on this committee, I will appreciate your views on any problem of medical disaster planning that you feel can be beneficial to this entire program.

As to the organization of a county medical society for medical care in event of disaster, I must emphasize that there can be no effective disaster medical care without the participation in and the planning for such care by practicing physicians. The work of planning and the direction of such care must be the duty of the physicians' representative body—namely, the county medical society.

The organization of a county medical society for disaster medical care must begin with the appointment of a committee on disaster medical care. Physicians selected for this committee should have either executive organizational ability, a background in traumatic medicine, or field combat experience in World War II or Korea. To effect an adequate program, the committee should consider the following:

1. Objective:

a. To provide effective medical and health services planning and care for the population area served by the society in the event of large scale local disaster.

b. To coordinate such existent planning with peripheral county medical societies for mutual aid and care in the event of total disaster.

2. Organization:

Basic planning should be divided into two components; namely,

a. Effective means of medical care of casualties from disaster site to hospital center. (Existent municipal systems may be found to be adequate; but if there is no adequate plan, one must be organized.¹)

b. The designation and establishment of a command post at the medical society headquarters or the county Civil Defense control center, whichever

is most feasible. The command post, which must have good liaison with the resident Civil Defense coordinator of the county, functions as the coordinator's medical staff consultant during a large scale local disaster. Specifically the following duties may be assigned:³

1. Furnish additional medical nursing and ancillary medical personnel to disaster sites or hospitals on request.

2. Have knowledge of current bed census throughout the county and shift casualty loads from disaster sites on request of disaster site medical officers or hospitals.

3. Assist the Civil Defense coordinator of the county in the event of overload of entire county bed availability by channeling requests to peripheral county medical societies for help in providing out-of-county available beds.

4. Assist the Civil Defense coordinator of the county in getting authorization from the regional office of the California Disaster office for indigenous use of stored Civil Defense hospital units if such seems feasible.

5. Fulfill requests for whole blood in accordance with the capacity of the local blood bank.

6. Initiate requests to the regional office of the California Disaster Office for narcotics and other items if the needs cannot be met within the county.

7. Recommend procedures as to matters involving mortuary services and facilities and public health when such problems cannot be solved at the disaster site or local level.

Personnel of the command post should be composed of coordinators for each of the following disciplines, with three or more alternates: Medical, nursing, dental, veterinary medical, pharmacy, mortician-coroner, blood bank.

3. Hospitals:

The county society through its Committee on Disaster Medical Care will request the chief of staff of each hospital to appoint a committee on disaster medical care. The first function of this committee will be to write a hospital disaster⁵ plan compatible with the facilities and personnel existent in the hospital. This plan should include three basic phases:

Phase One—Hospital disaster planning for disaster within the hospital due to fire, explosion, earthquake damage, epidemic, etc., defining provisions for care of all persons in the hospital.

Phase Two—Hospital disaster planning for large scale local disaster in which the hospital functions to receive large number of casualties from the community or area it serves.

Phase Three—Hospital disaster planning for total disaster due to widespread national destructive

forces in which the hospital may either evacuate personnel and regroup in another area before disaster strikes or, if the hospital survives the disastrous force, be able to mobilize its remaining facilities and remain functional.

4. Resources:

The county medical society Committee on Disaster Medical Care, through its command post personnel and planning, will be cognizant of all medical resources within the county society's jurisdictional area. Such resources defined should be:¹

a. The census of all beds, hospital and convalescent; also, available indigenous Civil Defense emergency hospital stored units, and buildings suitable for conversion for added bed space.

b. Census of ancillary medical personnel, especially nurses, dentists, veterinarians, pharmacists, laboratory technicians, morticians and coroners and deputy coroners.

c. Rough inventory figures of drugs, vaccines, dressings and intravenous fluids of the average hospital in the area, as well as the same items in the nearest wholesale drug firms.

d. The availability of food, water, auxiliary power, heat and light, as they pertain to medical care facilities.

5. Liaison with City and County Government:

There can be no effective community or county medical disaster planning and care without full cooperation and agreement between medical society disaster medical care committees and city and county Civil Defense coordinators. The county medical society, in its planning, must seek to provide the best immediate and thorough medical support and care to the community and county Civil Defense effort in time of disaster.

In areas having adjacent military installations, the representative surgeon should be requested to participate in medical disaster planning, in order that in an extreme disaster state, the available facilities of the military installation may be easily integrated with civilian resources and confusion avoided.

The California Disaster Office medical personnel

as well as the regional USPHS surgeon (OCDM) should be informed of any completed planning, and the medical society committee should call upon these offices for any advice it may need.

6. Communications:

Organizational structure and function will collapse without communication. All available types of communication must be maintained, if possible, between the county society command post, the county Civil Defense control center, the hospitals in the area and the disaster site. Whenever possible a survey should be made in the county area to determine the kind of short-wave radio equipment best suited for use. Installation of such equipment at all key sites should be carried out and provision made for operation of it by resident personnel familiar with medical terms and technology. (The A.M.A. has made representation to the Federal Communications Commission for medical communication on 13 frequencies in the 152-162 megacycle band and four frequencies in the 42-52 megacycle band.)

7. Test Exercises:

The county medical society Disaster Medical Care Committee should sponsor annually a test exercise involving the actual functions of all casualty care from disaster site to hospital center. This function has no substitute in pointing out weakness in planning, and it also serves as a test of the adequacy of any improvements that may have been introduced.²

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Problems Associated with Medical Disaster Care

Preparations in a Large Southern California Area

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MEDICAL CARE DISASTER preparations are designed to care for the victims of either a local or so-called natural disaster, or for a major disaster such as that caused by an enemy attack. Much of the planning, throughout the country, is based upon the concept of caring for situations of local or natural disasters, with the hope that in some way this can be greatly magnified to cope with a truly major catastrophe. This philosophy can be justified only by the truism that the whole is no more than the total of its parts, but it evades the issue of the major condition. It seems to be much more realistic to consider the component parts, then to plan for the major occurrence. If any lesser disaster occurs, then a part or parts of the all-out plan can be activated.

There are many problems related to planning at any level. In Region I there are many special ones, some of which are related to the size of the region, its population content and distribution, and the great variances in topography, climate and political and economic organization.

The size of the region in itself poses problems. Consider that from San Diego on the south, to Paso Robles, which is practically at the northern boundary of the region, it is about 350 miles; and going straight across from west to east, at one of the more narrow parts, it is 225 miles from Los Angeles to Blythe. The 12 counties in Region I represent more than one-third of the total area of the state.* Compared with other parts of the country this area represents about that of New York and Pennsylvania combined, or all of New England.

Population concentration is also very great, with some 8,725,000 persons, or about 60 per cent of the state's population living in the region. In addition to sheer numbers, the distribution of these people is important. In Los Angeles County there were 5,790,000 people as of July 1, 1958, and there were 952,000 in San Diego County. As you know, the danger zone concept has supplanted the older idea of target cities. The Los Angeles danger zone includes most of Los Angeles, Orange, Riverside and San Bernardino counties, where some 6,500,000

• In the organization for dealing with medical disaster, the region is in an intermediary position, between the State Disaster Office and the operational areas. Regional functions are largely those of coordinating the activities of the areas, and are based upon directives and plans from the state level.

The regional medical chief is a member of the staff of the Civil Defense coordinator and must advise him in all matters related to the health of the people, including medical and casualty care, hospitalization, public health, sanitation, preventive medicine and the special problems of biological, chemical and radiation hazards. Coordination with the other Civil Defense services is necessary.

The basic medical plan is to give emergency care in the first aid stations and then evacuate casualties to hospitals when and how the situation permits. Regional function is to obtain personnel, supply, equipment and hospitalization support when required.

Dispersal of danger zone populations to support areas creates many medical and public health problems among the displaced people and the residents.

Survival of the nation requires altered concepts of casualty management. The least injured who have the greatest productive potential should have the highest treatment priority. Short, life-saving surgical procedures must have precedence over long, complicated operations.

No plan is any better than the individual doctors, nurses and other personnel who will put it into operation.

people live. When these population concentration figures are considered, the enormity of the problem from the aspect of numbers of people alone becomes more apparent. It is estimated that if a 20-megaton device would be detonated over Los Angeles without warning, there would be 1,380,000 persons killed and 500,000 injured. If there were two hours' warning, the estimates are that 410,000 would be killed and 390,000 injured. Assuming that two-thirds of the injured would require hospitalization, and that the peak load would not exceed 75 per cent of the total injured, some startling figures can be developed. If Los Angeles, Long Beach and San Diego were all hit, the total number of injured for the region who should be hospitalized would vary from 261,000 to 333,000. Obviously it

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Chief, Medical and Health Services, Region I, State of California.

*By changes effective July 1, Region I was reduced to San Luis Obispo, Santa Barbara, Ventura, Los Angeles and Orange counties.

will never be possible to develop that many hospital beds in the region. One of our greatest problems is to provide even a fraction of the theoretical number of beds required.

Another problem that is directly related to the one of hospital bed shortages, is that of effective triage and then separation of patients into priority of treatment categories. Hospitalization must be reserved for only the most serious cases. This can be achieved by the treatment in the first aid stations of many persons who would be sent to the hospital under ordinary circumstances. A lot of education and training, and the proper selection of those to do the triage and classification, are necessary to enable this part of the casualty care system to function in the required manner.

The wide topographic and climatic variations in the region must be considered. There is a long ocean frontage with coastal basins, and there are hills, mountains, broad valleys and deserts. Both the highest and lowest points in the state and the country are within the region. Depending upon the time of the year, the climate can vary anywhere from very cold to blistering hot. The availability of satisfactory water is also very important in this part of the state. All these factors must be taken into consideration, since they affect planning for either a limited or major disaster, for victims or dispersees.

Although it is purely a logistical item, attention must be given to surface and air transportation facilities and routes. They can profoundly affect movements of population masses, which in turn can have both direct and indirect effects upon the medical situation. Of more immediate concern is the impact of transportation limitations upon the dispersal, evacuation and transfer of patients and the movement of supplies, equipment and medical personnel.

The availability and distribution of resources are of more importance in planning than any other single element. Human resources, of medical, nursing, allied, paramedical and ancillary personnel are included, as well as fixed and emergency hospitals, first aid stations, drugs and medications and general and medical supplies and equipment. The quality and quantity of medical care and services will be directly determined by resources at hand or obtainable from outside the region. A natural concomitant of urban growth is the concentration of these resources in the population centers, where they are highly vulnerable to loss by even rather limited attack.

Detonation of a 20-megaton weapon over downtown Los Angeles would result in the loss of at least 75 per cent of the hospital beds in Los Angeles County. Long Beach would lose all its hospitals if it

were a target, and San Diego almost all. It has been estimated that there are normally over 19,000 patients in hospitals within critical target areas, who should be dispersed if sufficient warning time were given. Surveys of the region reveal a normal bed capacity of about 21,000 outside the target areas. Even with expansion of the hospitals in support areas, a large proportion of the patients in those hospitals would have to be discharged to make room for the dispersed patients. But no one knows how many of these hospitals would be made untenable by radioactive fallout.

Sources of drugs, medications, supplies and equipment are the first-aid stations, the 200 bed emergency hospitals, retail and wholesale drug outlets, physicians' supply companies and warehouses of the manufacturing pharmaceutical firms. The first-aid stations are more or less concentrated within the critical target areas, so a high loss rate can be expected. Fortunately, the emergency hospitals have been positioned where it is felt that they are relatively safe. However, we have far too few of them, and even with the number on hand it has been very difficult to obtain satisfactory storage space for them. Most of the wholesale and retail drug sources, the supply houses and depots are in the urban centers, and therefore are subject to heavy losses. Hospital inventories are adequate for normal operational conditions, but would be very quickly depleted by an emergency.

Of great concern is the fact that cities that are subjected to major attack will not be able to care for themselves. It is problematic how much assistance can come from surrounding communities. The burden must fall upon the support areas, which are the least prepared with personnel, facilities, supplies and equipment for the task.

In the support areas medical care of the resident population cannot come to a complete halt. Refugee and mass care centers will present a number of problems, not the least of which will be medical care of the displaced persons, who can be expected to be emotionally upset and to be living under the most adverse conditions. The small health departments of these counties would be pitifully incapable of assuming the multiple public health, communicable disease control and sanitation supervision duties that will be required at these centers. It seems probable that all of these functions will have to be done by physicians among the displaced persons. One of our problems is how to give *all* physicians some training in the fundamentals of public health work and sanitation supervision, so that explosive epidemics, especially of diseases of the upper respiratory and gastrointestinal tracts, will not sweep through these intended havens.

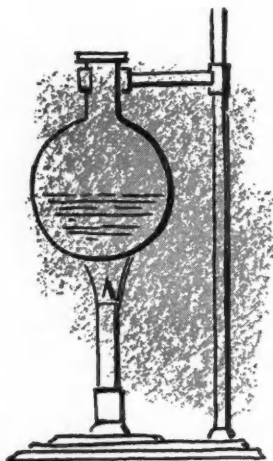
In all disasters except floods, the requests for blood suddenly increase. The procurement and distribution of safe blood, in amounts sufficient even partially to satisfy the demands, will pose many problems. Thousands of donor sets are stored throughout the region, but the needles must be inserted into the veins of donors, the blood has to be tested and processed, and then distributed in keeping with accepted techniques. The Red Cross regional blood center is the largest in the country, but it would be woefully inadequate and it is highly centralized. Very few hospitals actually have functioning blood banks.

Another purely logistical element that is a cause of great concern is communications. The medical service has no organic communications of its own. Without communications the best that we could provide would be a disorganized, uncoordinated medical potpourri. It would truly be a disaster. We

must face that prospect now, for if such a calamity should befall us, do you suppose that the public would accept the excuse that we did not have communications?

In the final analysis, no medical care plan can be any better than the physicians who are the very heart and soul of it. The greatest problem that confronts all of us, in every part of the country, is that of trying to get the members of the profession to face up to reality and to accept their traditional responsibilities in this area of medical services to the public. Acceptance means not just tolerance, but active support and also preparation to assume *any* role that may be assigned to any physician, either in any aspect of medical care or in public health or sanitation. We will never have really effective medical disaster preparations until this problem is solved.

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The Coroner and the Common Law

IV. Basic Qualifications of a Coroner or Medical Examiner

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THROUGHOUT the United States legal qualifications for the county medicolegal officer as currently established by statute are either meager or nonexistent. In one state (Arizona) there is no medicolegal practice act. In another (New Mexico) there is no coroner, inquest being held by a justice of the peace. In 37 of the United States anyone may be coroner. In four states coroners are justices of the peace; in three the coroner may be anyone who acts on the order of either the court or the prosecuting attorney. In nine states the medicolegal investigator must be a doctor of medicine. By local option in some counties among the United States the coroner has to be a doctor of medicine although there is no statewide requirement. In three states the medicolegal officer is a medical examiner.

Because of the diverse responsibilities of administration, investigation and inquest which are put upon him, in most localities, the coroner must manage his office, be an officer of inquiry with both medical and detective abilities and an advocate who is able to hold court where he may hear and adjudicate evidence. He also often has to be a politician. Such is the scope of knowledge and action required in medicolegal work that the coroner, to conduct his office properly, needs not only broad knowledge and experience but must have expert consultation, advice and technical assistance in diverse fields. It is not possible for one man today to encompass the multifold medical, legal and scientific areas. The basic qualifications obviously vary with the locality. Large urban centers have problems and demands that are very different, although no more difficult, from those encountered in smaller municipalities and in rural areas. In larger centers of population pressure for improvement has been heaviest and several different approaches for solution of the problem have been made.

San Francisco

In 1928 the freeholders of the City and County of San Francisco were directed to prepare a new charter under which the city might operate. One of the radical changes they instituted was the removal of the coroner from elective office. They directed that a licensed physician-surgeon be chosen by appoint-

ment to fill the office. The coroner incumbent at the time of this change in requirements was a licensed physician under the laws of the State of California. Because of his long experience he was blanketed in as a civil service employee with a civil service tenure for life. It was further stipulated in the charter that when he vacated the office, coroners thereafter would be chosen by a civil service examination with credit being given for experience, previous training, education, and grades received in an open examination. Previous to this time the term "autopsy-surgeon" had been made an official designation by the legislature of the State of California for physicians performing autopsy.

Under the terms of the new charter, the coroner was permitted to appoint autopsy surgeons, pathologists and chemists to his office staff. Money was appropriated for such services and these funds were included in the city budget. The newly appointed coroner, with a meager but somewhat increased budget, employed an autopsy surgeon and acquired the services of a pathologist who made gross and microscopic examination of material submitted by the autopsy surgeon for corroborative diagnosis.

This novel approach to a city and county's medicolegal problems produced improvements, although it established a system which was radically different from that of medical examiner. The coroner was an independent official accountable neither to the police department nor the district attorney's office. He had his own investigating staff of deputy coroners who inquired into the circumstances of death. The medical staff established the cause of death. He acted as the administrator and conducted the inquests. With this change in organization and improvement of facilities, the percentage of cases accepted and investigated by the coroner increased and the autopsy rate soon approximated 100 per cent. This figure has been maintained for 30 years.

Although the changes were radical, the coroner did not relinquish any of his authority or his existing privilege of inquest and investigation. He also retained the coroner's jury, which provides a system of balances and checks for the coroner, his deputies, the autopsy surgeon, the pathologist and the legal representatives of involved persons. Although different in name and with certain sociopolitical differences, the scientific organization, the operation

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and the results of such a system are very similar to those of a medical examiner's system operating in a similar area. After the passage of years and with the resignation or retirement of many of the original members of the office, a new medical staff was recruited from the faculties of the pathology departments of the Stanford and University of California medical schools. Currently the pathologist is a professor of pathology in the University of California Medical School and the autopsy surgeons are university-trained and board-qualified specialists in their field.

Following this example in San Francisco, other counties in California have chosen physicians as their medicolegal officials either by appointment or by competitive examination. In California today there are nine counties in which the medicolegal official is a licensed doctor of medicine.

Even in areas where the coroner is a physician and now has an able staff of consultants and assistants, the present stature of the medicolegal service is the result of a gradual expansion in response to evolutionary demands and the growing availability of desirable personnel. Other counties have made progress in other ways by contracting for special services and soliciting outside help from other counties, state agencies and private laboratories.

Under our legal system of establishing statutes by precedent which later become law by acceptance, no clear-cut code exists which establishes basic jurisdiction of the office of coroner. There are, however, five general categories of responsibility which may be accepted. These are:

1. Cases of homicide arising from criminality, which includes first and second degree murder, manslaughter, arson, rape, mayhem, abortion, culpable negligence, and death in suspicious circumstances. (The suspicion in such cases is usually a suspicion of criminality.)

2. Cases of death from suicide.

3. Cases where there is a financial association and relevance such as in industrial accidents, life insurance claims, or other liabilities wherein death has a monetary value.

4. Cases comprising deaths due to the products of civilization, such as traffic accidents, smog fumes and other vapors, carbon monoxide and dioxide, industrial solvents, food poisoning, pesticides and weed-killers, serums, vaccines and "wonder drugs." This latter group is growing in importance as medicine develops a fuller knowledge of disease processes and, through current drug therapies, produces some new diseases while eradicating or suppressing some old ones.

5. Cases of deaths which, although apparently of natural causes, are sudden and about which there is inadequate clinical data.

Neither the legal code of authority nor our existing medicolegal facilities are adequate to meet this expanding demand. The need for legal revision of the public health and safety codes in order to establish a group of basic principles for the effective operation of a good medicolegal investigative system has become obvious. Repeated attempts have been made to reorganize effectively and recodify on a county, state-wide and national basis. Interesting and productive among these efforts was the model postmortem examination act which was drafted by the National Conference of Commissioners of Uniform State Laws in Chicago in 1954. The California Assembly Judiciary Subcommittee on Police Administration, in September, 1959, issued a joint report on medicolegal investigation in which certain farsighted recommendations were made. Another subcommittee, the California Assembly Interim Committee on Public Health, had previously studied the outstanding differences between the medical examiner system and the coroner system and subsequently suggested an elaborate revision of laws pertaining to coroners. These reports have been thorough and thoughtful and the recommendations have been valuable. Meanwhile, the evolutionary processes have continued to contribute subtle changes in all existing systems and many of the deficiencies which were noted in old reports have been corrected. Many services previously noted in these surveys as needed but not available have since been provided in some areas due to public demand and social pressure.

There have been repeated local, state-wide and national attempts to legislate the coroner's office out of existence and substitute in its stead the office of medical examiner. These efforts are generated by persons who believe that changing the names of officials or their offices would improve their performance. The appellation is unimportant. The fundamentals of successful operation of the office remain the same in any circumstances. Certainly a legal code of basic principles and elementary requirements for a good state-wide medical legal investigating system should be established; but with the complexities of living and dying multiplying as they are today, a schema of professional and technical training should be instituted and trainees should be available for employment before a new code establishes higher standards of operation. Currently, not enough trained personnel is available to meet the staffing requirements of any state-wide reorganization.

The legal basis for the coroner's system in California rests upon our dedication to state and county home rule. In four charter counties—Santa Clara, San Mateo, Los Angeles and Sacramento—and in the consolidated City and County of San Francisco,

the coroner is appointed after civil service examination. The entire staff in Los Angeles County has been under civil service since 1913. In 53 counties, however, a coroner is elected and in many counties the officer is compensated on a fee basis. The state law provides an optional consolidation of the office of coroner with certain other county offices, most commonly those of public administrator and sheriff. Fifty-two counties have exercised this option: 40 of California's counties have combined the coroner's office with that of public administrator, 11 combined it with sheriff, and one combined it with the office of district attorney.

In each county there are varying qualifications specified for one who may be appointed or elected as coroner. The rate and mode of compensation is determined locally, but the coroner is charged with his duties under the state law. Consequently he is not required to apply for a local court order to authorize an investigation or to seek the permission of other law enforcement officials to obtain possession of the body of a decedent, nor is he required to call witnesses. He has jurisdiction and the law directs him to cause an investigation to be made.

Basically, the coroner in California is an administrator with the authority to obtain the services of such specialists as he may need to carry out the laws governing and stipulating his duties. Although a county officer, he is by no means confined to the borders of his county in obtaining such special services as he may find necessary. He may arrange with laboratories and specialists in other counties or cities to make analyses and, if necessary, he may go outside the confines of the state to obtain consultation. The fees due for any such work become a charge on the county involved and are payable by the county board of supervisors.

It is estimated that California coroners order autopsies in approximately 50 per cent of the cases that come under their jurisdiction. This rate, of course, varies greatly between counties. A few report that they conduct autopsies on all referred cases; the larger counties, having full-time autopsy surgeons on their staffs, have more facility and economy in this regard than smaller counties. In rural areas there is generally a panel of doctors who rotate on call. Some counties have standing arrangements with specialists on the staffs of county hospitals or other local institutions to provide assistance and consultation. An increasing number of counties now have laboratory facilities and a pathologist or pathologists on the county payroll. Several counties have made pathological and laboratory facilities available through the county hospital and the coroner arranges for such work as he needs it. Many of the

smaller counties that do not have such equipment and personnel available within the county send their material to outside laboratories as a regular routine. The University of California Medical School and Stanford University School of Medicine give some assistance. The State Crime Laboratory in Sacramento provides service for many counties. Some counties contract with private laboratories and one county, Solano, reports that it receives expert assistance from the medical department of the Navy station located within its confines.

Currently, the coroners of most counties avail themselves of expert help and consultation in one or several phases of their work. The amount of work that is referred to the coroner's office is often out of proportion to the size or population of the county. Alpine County has about 400 persons and almost no coroner's cases, Del Norte County has slightly over 18,000 population and between 35 and 40 cases per year, while Los Angeles County with some 6,000,000 people has coroner's cases running well into the thousands. San Francisco with a far lower population (700,000) has a much higher percentage of cases referred to the coroner's office, averaging between 2,500 and 3,000 cases per annum, in nearly all of which autopsy is done. There is a growing trend within the state for the larger, more affluent and better equipped counties to assist the smaller counties, not only by providing consultation on low fee or fee-free basis, but also by helping them to raise their standards in many ways.

The coroners of the state are organized and through their organization have not only improved the quality of the work done by their offices but have been able to influence state legislation in their behalf. The California Medical Association, with its well developed organization, has also been actively interested in the medical-legal problem and has repeatedly adopted resolutions for the enactment of a uniform and efficient state-wide system. It was partially through the efforts of the California Medical Association that the 1953 California State Legislature created a fact-finding interim committee. In that year there were 110,023 deaths in the State of California, of which 84,162 were certified by physicians and 25,861 by coroners. Some 33,000 autopsies were performed, 19,000 were performed on a private basis by permit and 14,000 by coroner's offices. Of the 14,000 autopsies by coroners, about half were done in Los Angeles, Alameda and San Francisco counties. In Alameda and San Francisco counties autopsy was done in almost all coroner's cases, while in Los Angeles County it was done in about 40 per cent of such cases.

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An Approach to Biliary Tract Operations

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MANY DIFFERENT KINDS of incisions have been suggested for adequate exposure of the contents of the right upper quadrant of the abdomen. One of these, described by Ripstein,² entails opening both the chest and the abdomen to expose the common duct widely and with safety. Use of a second and even a third assistant is mentioned in many of the articles on the subject. In surgical procedures carried out by the average surgeon who does not practice in a medical center, the use of even a second assistant is usually prohibited by economic factors.

We have been pleased by the superb exposure of the extra-hepatic biliary tract offered by a combination of changes in the usual approach that we have been using for the past several years. One of the changes is to place the patient in a position on the operating table that will gain as much as 5 inches of vertical exposure to the duct areas, as can be seen in Figure 1.

The patient is rolled to the left and a standard pillow is folded lengthwise, compressed as much as possible and placed beneath the shoulders and back. A second pillow is placed between the legs. The rolled or slanted position of the patient is adjusted so that the right side of the coronal plane is elevated enough that this plane makes an angle with the horizontal of about 20 degrees. The table is then "broken" in the middle so the right flank muscles are stretched. The entire table is then tilted headup approximately 10 degrees so that gravity will retract the abdominal viscera toward the patient's left side and toward the feet. The right arm is attached to the anesthetist's "screen" so that the humerus is elevated approximately 90 degrees and the forearm flexed the same. Considerable care must be taken to assure that no traction on the axillary or supraclavicular vessels and nerves occurs. By putting the arm in this position, a slight degree of upward and outward traction is placed upon the right costal margin. This adds to the exposure available through the right angle incision to be described.

The depression brought about in the abdomen directly over the common duct area (Figure 1) is the equivalent of having brought the common duct anteriorly the same distance. In addition, the position seems to permit the duodenum and common

• By changing the position of the patient and of the operating team and by using a right-angle incision, superb exposure of the right upper quadrant abdominal contents can be had with little or no retraction by human effort.

duct to slide medially and appear as if they were on top of the spinal column. With the patient in this position and traction maintained mechanically, one surgeon by changing his place at the operating table can carry out the operation almost without assistance.

Often in descriptions of cholecystectomy technique the surgeon is advised to avoid the awkward position that otherwise would be necessary by moving from the right side of the table to the left to palpate the anatomic structures in the hepato-duodenal ligament. With the position herein described, this shifting from side to side is obviated,



Figure 1.—An obese patient in the left semilateral cholecystectomy position. Note the pronounced depression just below the right costal margin. It is this depression, caused by sagging of the viscera to the left and caudally, that in effect brings the common duct area close to the abdominal wall.

Submitted February 2, 1960.

for the entire operation is done from the left side, the surgeon standing in a natural and relaxed position and looking directly at the junction of the common and cystic ducts. Moreover, because gravity supplies a gentle tug upon the duodenum and tends to roll it over the anterior surface of the spinal column, while the colon and small intestine sag toward the left ilium, it is not necessary to have an assistant holding constant and accurately placed traction on the common bile duct and duodenum.

The subcostal, the right upper quadrant muscle-splitting incision, and the hockey stick incision have been used most commonly for gallbladder operations. Any of them may be used with the patient in the position just described. In 1953 Holman¹ advocated the use of the Kehr incision, which comes very close to providing the ideal exposure of the extrahepatic biliary tree. We have found that the right-angle incision in the right upper quadrant gives the best exposure with the least amount of human assistance. Usually the incision is begun just lateral to the lateral border of the right rectus sheath at the level of the tip of the tenth rib and then is extended medially to a point just short of the midline. Opening is made into the abdominal cavity for manual exploration. If any contraindication to the initially planned procedure is observed at that stage, the second limb of the incision need not be made.

If after exploration the surgeon decides to continue, the vertical skin incision is made directly in the midline, starting from the medial end of the completed transverse incision and extending upward to the tip of the xiphoid process. A long strand of heavy retention silk is placed through the fascia at the projecting corner of the upper flap created by the incisions. A weighted vaginal retractor is tied to this suture approximately 5 inches from the "corner." The corner is lifted vertically slightly and then drawn upward in a direction such that the heavy silk bisects the base of the flap triangle. The use of this weighted retractor provides a wide opening through which the surgeon may operate with no other abdominal wall retraction required. A laparotomy pad is used to hold the hepatic flexure area of

the transverse colon out of the operative field. After the stomach has been emptied of its gaseous and liquid contents through a nasogastric tube, a second pad is used to pack it toward the left. In many patients the common duct will lie almost flush with the abdominal wall and sometimes flush with the skin on the left side of the incision. Common duct operations and cholecystectomy are greatly facilitated by the above described incision, and the position of patient and surgeon.

Accurate closure of this abdominal incision is important. The tension on the flank musculature is released by straightening the surface of the operating table, no change being made in the general slope toward the foot of the operating table, lest the viscera ascend enough to make the closing of the abdomen difficult. Then the weighted retractor which has been holding the upper flap is lifted and pulled across the abdominal wall so that the heavy silk suture lies toward the left and somewhere in the area of the anterior superior spine of the left ilium. With the weight drawing the upper skin flap into approximate anatomic position, the fascial structures of the right-angle corner are approximated with a single figure-of-eight suture of 2-0 silk. Closure of the abdominal wall may be done in any fashion that suits the surgeon.

This procedure has been used to provide excellent exposure for pancreaticoduodenectomy. With the patient turned toward the right and a left upper quadrant right angle incision, admirable exposure for splenectomy can be obtained. We have used and modified the procedure over a period of more than ten years with no incident of wound complication other than the kinds that occasionally follow any operation.

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CASE REPORTS

Surgical Correction of Traumatic Partial Separation of Ventricular Septum

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WILLIAM E. BLOOMER, M.D.,
JOHN E. MEIHAUS, M.D., and
REUBEN R. LEWIS, M.D., Los Angeles

FREQUENTLY in blunt trauma to the chest the heart is injured. One of the lesions produced by a blunt force may be single or multiple ventricular septal defects or traumatic separation of the ventricular septum from its anterior attachment. The following is a report of the diagnosis of a traumatic partial separation of the ventricular septum and surgical repair with the heart open and a heart-lung machine used to maintain circulation.

REPORT OF A CASE

The patient, a 19-year-old boy, was in excellent health until June 28, 1959, when the car he was riding in hit a telephone pole. He was thrown from the back seat to the front seat, hitting his chest against the dashboard of the automobile. He was admitted to Kaiser Foundation Hospital and there remained unconscious for 88 hours. Upon examination soon after the accident no fractures or other injuries were noted. Heart sounds were normal. Six days later on July 4, 1959, severe dyspnea, tachycardia and cyanosis developed suddenly. At this time a right ventricular lift and an apical thrust at the fifth intercostal space 1 cm. lateral to the midclavicular line were noted. There was a thrill along the left sternal border, most pronounced at the third intercostal space. A grade VI, harsh, pansystolic murmur was heard over the entire precordium with maximum intensity at the left third intercostal space with radiation to the apex and base of the heart. The second pulmonic sound was louder than the second aortic but was normally split. A very short, early, minimal diastolic murmur was heard at the left third intercostal space. Blood pressure was 115/70 mm. of mercury. An electrocardiogram showed sinus tachycardia and evidence of antero-

septal injury and anterior wall ischemia. X-ray films of the chest showed bilateral infiltration of the lung fields and moderate cardiac enlargement. Because of the severe pulmonary congestion and left heart failure, tracheotomy was done. Digoxin and diuretics were administered. The patient gradually improved, the tracheotomy tube was removed and he was sent home on August 8, 1959. Rest, low salt diet and digoxin were continued at home. Despite this medical regimen, walking around the house produced dyspnea.

Three weeks later, on August 27, a right heart catheterization was performed at Cedars of Lebanon Hospital and the following data were obtained:

Station	Pressure (mm. of Hg.) Systol./Diastol.	Oxygen Saturation (Vol. Per Cent)	Oxygen Saturation Per Cent
Superior vena cava.....	5/3	12.3	71.6
Right atrium.....	7/3	Low 12.5 Mid 12.3	72.4 71.6
Right ventricle.....	74/12	Body 13.8 High 15.8	80.2 91.7
Main pulmonary artery... 66/27		14.5	84.2
Right pulmonary artery.. ..		14.6	85.1
Right and left peripheral pulmonary artery..... 18/13	
Right brachial artery.....		16.2	94.0
Systemic blood flow.....		6.4 liters per minute	
Pulmonary blood flow.....		16.8 liters per minute	
Left to right shunt.....		10.4 liters per minute	

He was then referred to us for operation and on November 17, 1959, he was admitted to St. Vincent's Hospital, Los Angeles, for an open heart procedure. Physical findings were essentially the same as those previously reported. Thoracic x-ray films showed grade II cardiomegaly, with a configuration indicating considerable right-sided enlargement involving the right atrium as well as the right ventricle. Left ventricular enlargement was not as pronounced. There was decided prominence of the main pulmonary artery and its hilar branches, and a grade III increase in the vascularity of the lungs. The small vessels formed a gross reticular pattern which was secondary to the pulmonary hypertension. An electrocardiogram was consistent with left ventricular hypertrophy. Hematological

From the Department of Surgery of the University of Southern California School of Medicine, St. Vincent's Hospital and the Los Angeles County General Hospital.

Aided by a grant from the United States Public Health Service.
Submitted March 24, 1960.

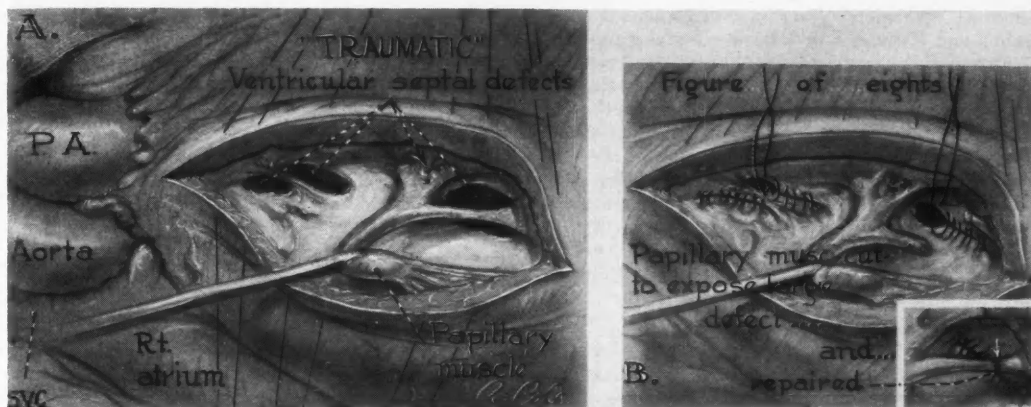


Figure 1.—Left: Ventricular septal tears as seen through an incision in the right ventricle. Right: Technique of repair with large figure of eight sutures of heavy silk.

examination and urinalysis were within normal limits.

On November 24, operation was performed with circulation and oxygenation of the blood maintained by use of a Kay-Anderson autoclavable, stationary screen oxygenator.⁹ A median sternotomy incision was made. A grade VI pansystolic thrill was palpable over the entire right ventricle. The left superficial femoral artery was cannulated for recording pressures. The right common femoral artery was cannulated to return oxygenated blood to the patient. Both cavae were cannulated through the right atrium. Cardiopulmonary by-pass was begun and the right ventricle was opened.

There were four distinct ruptures in the ventricular septum; but only two were seen at first. One, 1 cm. long, was located at the anterior portion of the septum near its origin from the anterior part of the ventricle 3 cm. from the pulmonary valve, and the other, 2 cm. long, was immediately beneath the first one. They were repaired with interrupted figure eight sutures of No. 0 silk and, in the belief that they were the only lesions present the surgical incision in the ventricle was closed and cardiopulmonary by-pass was discontinued. However, when a grade III to IV pansystolic thrill persisted in the lower portion of the right ventricle, cardiopulmonary by-pass was reinstituted and the right ventricle was reopened. After extensive search the two remaining traumatic tears were found. One of them, 5 mm. in diameter, was a third of the way from the apex of the heart and the other was so hidden behind the papillary muscle of the tricuspid valve that to repair it necessitated cutting half of the insertion of the papillary muscle (Figure 1). The defects were closed with interrupted sutures of heavy silk placed in a figure eight fashion. The incised papillary muscle was sutured with interrupted 2-0 silk. The by-pass was discontinued for the second time and there was then only a faint grade I thrill palpable over the right ventricle, which was ascribed to small leaks through the suture holes. The chest

was closed. The postoperative condition of the patient was uneventful, except for slight hepatomegaly on the seventh postoperative day, which subsided promptly when diuretic therapy was administered. The patient was discharged from the hospital two weeks after the operation with prescription of a low salt diet, digoxin and diuretics.

DISCUSSION

In 1935 Bright and Beck¹ summarized the post-mortem observations in 152 cases of cardiac rupture due to nonpenetrating injuries to the heart. Eleven traumatic tears in the ventricular septum and one in the atrial septum were noted. East⁴ reported a traumatic rupture of the ventricular septum, diagnosed clinically, in a nineteen-year-old man. Operation was not done and the patient appeared to be doing well three and a half years after the injury. The first case of traumatic ventricular septal defect proven by cardiac catheterization was reported in 1953 by Guilfoil and Doyle.⁷ The patient in that case was reported upon by Campbell, Vernier, Varco and Lillehei² who noted no changes in pulmonary artery pressure when right heart catheterization was carried out again five and a half years later.

Pollack, Markelz, and Shuey¹³ reviewed 12 cases of traumatic ventricular septal defects in the literature and added a report of a case proven at autopsy. In 1958 Inkley and Barry,⁸ French and Fowler⁶ and Carey, Hurst and Arentzen³ reported a case of traumatic rupture of the ventricular septum due to blunt force, the diagnosis substantiated by cardiac catheterization. Operation was not done in any of these cases.

The first successful repair of a traumatic ventricular septal defect with the heart opened by surgical incision was that of a 13-year-old boy who was operated on in 1955 with heterologous lungs used to maintain oxygenation. This was reported by

Campbell, Vernier, Varco and Lillehei.² Peirce, Dabbs and Rawson¹² in 1956 successfully repaired a rupture of the ventricular septum by open cardiomy with a patient under mild hypothermia and without a heart-lung machine. In the same year, Mahaffey, Schramel and Creech,¹¹ using a bubble type oxygenator, repaired a perforation of the ventricular septum produced by a penetrating stab wound. In 1960 Feruglio, Bayley, and Greenwood⁵ summarized the literature and reported a case of nonpenetrating chest injury resulting in isolated rupture of the ventricular septum and angina pectoris with surgical repair of the septal rupture.

The tear in the ventricular septum is probably most likely to occur when external force is applied to the heart during diastole or early systole. At this time the ventricles are full of blood and traumatic compression of the ventricular wall, with the tricuspid and mitral valves in closed position, allows for little or no relief of pressure, for the blood cannot flow in a reverse direction into the atria. Therefore with blunt trauma the sudden elevation of the intraventricular tension in the full ventricles with force applied to the outflow tracts may cause traumatic rupture of the septum or even rupture of the ventricles. This has been emphasized by Inkley and Barry.⁸

SUMMARY

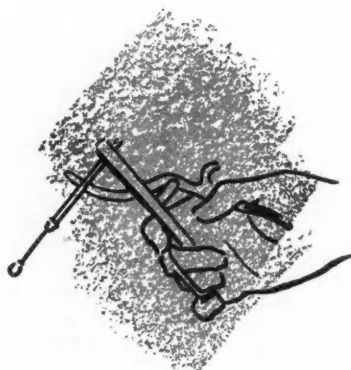
A case of traumatic separation of the ventricular septum with surgical correction by operation upon the open heart is presented. In this patient early operation was indicated due to the moderate cardiac enlargement, cardiac failure, symptoms with minimal exertion and moderate pulmonary hypertension.

2122 West Third Street, Los Angeles 57 (Kay).

ADDENDUM: Patient is now back at work eight hours daily and feels perfectly normal. He no longer is on digoxin or other medications and is on regular diet and normal activity.

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California MEDICINE

For information on preparation of manuscript, see advertising page 2

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EDITORIAL

Medicine and Allied Health Professions

"PHYSICIANS are under increasing pressure in this explosive era of medical progress to apply the principles of science to the care of their patients."

This sentence, buried in the language of an extensive report by a committee of the Board of Trustees of the American Medical Association, states in simple language a fact that is emerging with increasing clarity and force from the surge of scientific activities throughout the world today.

The questions posed to the committee by the A.M.A. Trustees revolved around the fact that today's physician, if he is properly and adequately to serve his patient, must call on a large group of allied scientists for help. The committee's job was to review this entire question, analyze the forces and talents involved and make recommendations for harnessing the whole field of science in the interest of the patient.

That the committee did a thorough and scholarly job is attested in a review of its report.* Indicative of the scope of the study are the simple figures that in 1958 there were two and one-half times as many Ph.D.'s as M.D.'s engaged in teaching and research in the "basic medical science departments of anatomy, biochemistry, microbiology, pharmacology and physiology." In addition, the study states that "it is estimated that there are already some eight individuals in allied health activities for each physician engaged in patient care."

Figures such as these emphasize the fact that the physician sees and treats the patient but that he must surround himself with allied professions if he is to give the best of scientific care to the patient.

The A.M.A. has taken the lead in studying this growing phenomenon and suggesting an orderly method by which the special talents of each profes-

sional or technical group may be classified, evaluated and combined into a smooth-working team for the benefit of the health of the people. Such a study, in the minds of many thinking physicians, is long overdue.

It is easy for the practicing physician to think about nurses, the pharmacists and laboratory assistants as members of the health care team that serves his patients. But, in addition to these individuals, there are some fifty additional groups that provide some measure of services which contribute to the total picture of medical care. The committee report lists a number of such groups, including electrologists, masseurs, medical technologists, midwives, opticians, optometrists, podiatrists, psychologists, physical therapists and others. While many of these groups, each with its own talents and functions, may not readily come to the mind of the physician, each of them is an entity in the health picture today and each must be recognized in this light.

Some of these allied professions are today regulated by law, notably pharmacists and nurses. Some are required to secure a state license in order to practice their professions, even as physicians must do. Others may practice after the formality of registration based on acceptable credentials. Still others come under no statutory regulation and thus may set themselves up in practice by complying only with local police regulations covering business establishments.

In view of the variety of methods by which the allied professional groups may enter practice, and in view of the constantly increasing place they are making for themselves in the eyes of the public, the A.M.A. committee report calls for the need of recognition, understanding and, if advisable, cooperation between the medical profession and the other groups. This recommendation is based on the fact that the physician has the ultimate responsibility for the health care of the patient but that many others may be able to make valuable contributions to that care.

*Copies may be obtained by writing to John Hinman, M.D., secretary of the Committee on the Relationships of Medicine with Allied Health Professions and Services, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

This philosophy would call for a stop to the possible fragmentation of medical care and the employment of allied skills in excess of their true worth. It would also call for a recognition by all groups involved of the skills possessed by each and the cooperation of all worthwhile groups for the ultimate and maximum good of the patient.

Since the physician is vested with final and complete authority in the field of health care, he should assume the leadership in accomplishing these objectives. He must recognize and respect the talents and the contributions which others may make for the benefit of the patient. In turn, he may reasonably expect the others to show this same recognition for his talents and responsibilities.

While the recommendations of this committee are necessarily couched in general terms, they may be boiled down to a few specifics. In short, they call for recognition, study, training, utilization and cooperation by all professional and technical groups. They ask that a program be undertaken to reach these goals and that the medical profession take the lead in this program.

Obviously, a plan of this type constitutes long-range planning which may well be beset by innumerable difficulties. What is hoped for is a gradual meeting of the minds between all these health professions, aimed at the better care of patients. If, in the process, some groups emerge as worthless or as overlapping into other fields, some changes may occur in the recognition and training of such groups. If mergers between contiguous groups are indicated, such mergers could be accomplished for the good of the patient.

The facts that three years have gone into this preliminary study and that more than 150 representatives of allied health groups were consulted in the process indicate the scope of the problem, as well as pointing to the long-range nature of the program envisaged by this committee.

For a provocative and timely report on the elements of the best in medical care for all the people, this scholarly study is recommended reading. Fortunately, the Board of Trustees of the A.M.A. plans to keep this committee and its subject matter alive and active.

Letters to the Editor...

The Malignant Effect of Premature, Mass Publicity Concerning Factors Causing Malignant Disease

THINGS LIKE last year's nationwide publicity concerning cranberries and stilbestrol-fed chickens and the continuing controversy concerning the carcinogenic effect of cigarettes are rapidly changing the United States into a nation of frightened people, many of them ridden by tyrannical—and to a large extent unjustifiable—anxiety and fear. These two emotions per se will shorten the lives of millions and very likely actually kill thousands. Every clinician knows that fear and anxiety increase the incidence of cerebrovascular accidents and aggravate a host of otherwise reasonably well-compensated organic illnesses.

The wise physician does not tell his patient everything—certainly not *all* the technical truths concerning for example, a rise of blood pressure, since to do so would aggravate a condition he is seeking to alleviate.

Just as an individual may request complete candor and the total truth from his physician, so may a curious and enlightened public. However, in some circumstances truth and candor, despite the request are not really wanted at all, for no one wishes to have knowledge that can only lead to a feeling of

hopelessness. So even in the case of the most serious and desperate clinical conditions the patient is entitled to receive a prognosis which includes the element of hope, and the best thinkers are agreed that this soul-saving loophole must be presented to the sick, the troubled and even the dying. This dictum, far from being hypocritical or dishonest, embodies in it the very essence of the physician's credo, since it is not only his duty to prolong life, but also to alleviate human misery.

In a way, the public, which by and large receives medical information from newspapers, magazines, radio and television, is a captive audience. If the source of medical information bears the authenticity emanating from authoritative figures, it will create a profound effect in the minds and feelings of the recipients. A trusting child will accept almost any idea from a conscientious and loving father. The child is not only incapable of being judgmental, but does not wish to be, since he prefers to try to retain his feelings of the omnipotent and omniscient parent. The public who are exposed to medical propaganda, although they be adult, usually feel, and have a right to feel, very much the same way about their nation's medical leaders.

There is no question that there are often unavoidable and legitimate differences of opinion, even

among authoritative experts. But when these differences or even diametrically opposed opinions exist, they should either be reconciled between the parties concerned or, if this be impossible, conflicting opinions should not be widely disseminated either simultaneously or separately within the span of a few weeks. To do so is to arouse confusion, dispel confidence and engender distrust in the sources of information which most people wish to regard as unassailable. Last year's questionably valid publicity about cranberries, and the even more recent and debatable scare about stilbestrol-fed chickens almost certainly will do more harm than good.

The tremendous anxiety about cigarette smoking in relation to bronchogenic and lung cancer has had a profound effect on millions of smokers for the past five years. The conflicting evidence presented in December, 1959, by the Surgeon General of the Public Health Service, Dr. Leroy Burney, and Dr. John H. Talbott of the *Journal of the American Medical Association*, leaves the public completely at a loss as to whether to start smoking, to reduce their smoking or stop smoking.

Again, let it be said that such differences of opinion are often inevitable and even desirable, but just as mother and father differ in their admonitions and ideas about restricting a child, the differences can only do the child harm if presented to him; they should be settled or suppressed without his awareness. It does not seem fair or humane to confront any human being with an anxiety-provoking dilemma, that he is quite incapable of solving.

The adult public when forced to be conversant with widely differing opinions that he is incapable of appraising, feels deserted and unprotected. These feelings in turn become complicated by fear and anger, which to a great degree could be avoided by more judicious and discriminating decisions con-

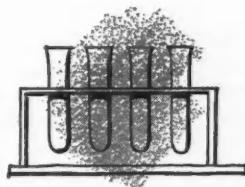
cerning the appropriateness, and particularly the timing, of information which even if noncontroversial will be difficult for many to understand and even more difficult for many more to accept without terror. We humans cannot always avoid anxiety and sometimes, even panic. But, it seems almost inexcusable to add to these burdens of human existence unless the benefits far exceed the harm.

The philosophy of medicine is just as important as the science of medicine. How comfortably people live is as important as how long they live. It has been said that if we had a choice most of us would take a shorter life relatively free from terror in preference to a longer life fraught with overpowering anxiety.

It seems to me that the best way of regulating the enunciation of medical propaganda in general, particularly information about carcinogenic agents, would be by the following plan: A committee closely affiliated with the President of the United States possibly headed by a cabinet member having to do with the health of this nation, should take the responsibility for the quality, quantity and timing of information reaching most of the population of this country. Such a committee might well be composed of the Surgeon-General of the United States Public Health Service, the editor of the *Journal of the American Medical Association*, a physician who is recognized as an expert on malignant disease, an authority on industrial medicine and at least one top-flight psychiatrist. From the accumulated wisdom of such men and the meeting of these minds, the American public would receive more accurate and less controversial reports and would thereby be spared much of the fear that now overwhelms some persons.

MARK LEWIS GERSTLE, M.D.

Sacramento



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Minutes of the 460th Meeting of the Council, San Francisco, Hilton Inn, June 4, 1960.

The meeting was called to order by Chairman Sherman in the Hilton Inn, San Francisco International Airport, on Saturday, June 4, 1960, at 9:30 a.m.

Roll Call:

Present were President Foster, President-Elect Bostick, Speaker Doyle, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors MacLaggan, Wheeler, Todd, Quinn, O'Neill, O'Connor, Shaw, Rogers, Gifford, Murray, Davis, Miller, Sherman, Campbell, Morrison, Anderson and Teall. Absent for cause, Councilor Kirchner.

Present by invitation were Doctors Batchelder and Miller and Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Whelan, Edwards and Bowman of C.M.A. staff; Messrs. Hassard and Huber of legal counsel; county executives Scheuber and Hackett of Alameda-Contra Costa, Geisert of Kern, Field of Los Angeles, Bannister of Orange, Bailey of Tulare, Brayer of Riverside, Donmyer of San Bernardino, Neik of San Francisco, Thompson and Pearce of San Joaquin, Wood of San Mateo, Donovan of Santa Clara, Funk of Solano, and Blankfort of Marin; Dr. A. E. Larsen and Messrs. Paolini and Lyon of California Physicians' Service; Dr. Malcolm Merrill, State Director of Public Health; Dr. Daniel Blain, State Director of Mental Hygiene; Mrs. Eunice Evans and Dr. John Keye of the State Department of Social Welfare; Dr. E. B. Howard, Assistant Executive Vice-President of the American Medical Association; Doctors Robert Holmes, Frank Healey, Owen Thomas, James Moore, J. Lafe Ludwig, Dan O. Kilroy, Clyde Boice, Donald Harrington, Packard Thurber, Jr., Malcolm Watts, John Schaupp and others.

1. Minutes for Approval:

On motion duly made and seconded, minutes of the 459th meeting of the Council, held April 23 and 24, 1960, were approved.

2. Membership:

(a) A report of membership as of June 2, 1960, was presented and ordered filed.

(b) On motion duly made and seconded, 407 delinquent members whose dues have been received, were voted reinstatement.

(c) On motion duly made and seconded in each instance, nine members were voted Retired Membership. These were: Homer A. Rue, Butte-Glenn County; Belle Wood Comstock, William J. Norris, Ann Dumont Staatz, Los Angeles County; William L. Howell, San Diego County; John M. Graves, Millard Reed Ottinger, San Francisco County; Charles R. Caskey, Curtis M. Galt, San Joaquin County.

(d) On motion duly made and seconded in each instance, 17 applicants were voted Associate Membership. These were: Allan J. Gherini, Henry A. Renteln, Carl D. Wells, Alameda-Contra Costa County; James A. Gonner, Patricia H. Henderson,

PAUL D. FOSTER, M.D. President
WARREN L. BOSTICK, M.D. President-Elect
JAMES C. DOYLE, M.D. Speaker
IVAN C. HERON, M.D. Vice-Speaker
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Fred C. Tongue, Fresno County; John T. Burroughs, Alma C. Corn, Geraldine J. L. Dickinson, Johnette G. Ensign, Allan I. Mann, Clyde H. Nelson, Los Angeles County; Roswell Fine, Marin County; Wayne C. Mercer, San Francisco County; Jaime Amselem-Benmaman, Robert Van Bruggen, Santa Clara County; Jon L. Karlsson, Sonoma County.

(e) On motion duly made and seconded, 20 members were voted a reduction in dues because of illness or postgraduate study.

3. *Committee on Blood Banks:*

Dr. James Moore, chairman, and Dr. Owen Thomas, member of the Committee on Blood Banks, presented a resolution which had been adopted by the committee and by the California Blood Bank System and requested that it be referred to the California delegation to the American Medical Association for consideration. On motion duly made and seconded, it was voted to approve this resolution and refer it to the A.M.A. delegation for consideration.

(The resolution asked that A.M.A. representatives on the national Joint Blood Council be selected from physicians with a direct interest in and knowledge of blood banking.)

4. *Standardization of Joint Measurements:*

Dr. Packard Thurber, Jr., member of the Subcommittee for Standardization of Joint Measurements, presented a copy of the revised edition of the manual "Evaluation of Industrial Disability" and requested that the revisions be published in CALIFORNIA MEDICINE. On motion duly made and seconded, this request was referred to the Editor.

Dr. Thurber also requested that this subcommittee be maintained for further study and recommendations in the field of industrial disability. On motion duly made and seconded, it was voted to refer this request to the Committee on Committees.

5. *Legislation for Health Care of the Aged:*

The chairman introduced Dr. E. B. Howard, assistant executive vice-president of the American Medical Association, who reported on the status of federal legislative proposals to provide health services for the aged population.

Dr. Clyde Boice of Santa Clara County and Dr. Elmer Gooel of Los Angeles County discussed proposals for such care which had been advanced and approved in their respective county medical societies.

Dr. Donald Harrington presented a resolution which the Commission on Medical Services proposed for presentation to the A.M.A. House of Delegates.

Dr. J. Lafe Ludwig, member of the A.M.A. Committee on Legislation, reported on the overall picture of federal legislation in the field of health care and pointed out that of 19 health bills approved by Congress in 1959, the A.M.A. had supported 14.

The chairman referred all these presentations to a special committee under the chairmanship of Councilor Todd, with instructions to review these proposals and report back at a later hour.

Dr. Todd's committee reported later in the day and the following actions were taken:

1. On motion duly made and seconded, the resolution presented by Dr. Harrington was voted approval and referred to the California delegation to the A.M.A. for introduction in the A.M.A. House of Delegates.

2. On motion duly made and seconded, the proposals advanced by the Santa Clara County Medical Society and the Los Angeles County Medical Association were voted referred to the Commission on Medical Services for consideration and report to the Council.

6. *Report of the President:*

President Foster presented a resolution which he proposed be introduced into the A.M.A. House of Delegates, to encourage added emphasis on the recruiting of potential physicians from the science students in undergraduate schools. On motion duly made and seconded, the resolution was approved and referred to the delegation to the A.M.A. for introduction in the A.M.A. House of Delegates.

Dr. Foster also suggested that the advance agenda for Council meetings be expanded with the addition of explanatory material.

Dr. Foster also suggested that a history of the California Medical Association be written. After discussion, on motion duly made and seconded, it was voted to appoint a committee to look into the feasibility of preparing such a history. The chairman named Dr. Teall, chairman, and Doctors Quinn and Rogers as members of this committee.

7. *Financial:*

Chairman Heron of the Finance Committee presented a report of current cash balances, which was ordered filed.

Dr. Heron also reported that all bank loans had been paid by using interfund borrowing. Additional loans will be needed from the banks later in the year.

Dr. Heron also reported that the Los Angeles Physicians' Aid Association has now requested that a loan of \$50,000, authorized by the Council in 1959, at an annual interest rate of 2½ per cent, be

consummated. Legal counsel is working on this as to security to be provided for the loan.

Dr. Heron also reported that several officers and members of the Association were being called upon to devote considerable time to the work of the Governor's Committee for the Study of Medical Aid and Health and that the Finance Committee had voted to recommend to the Council that these members be allowed the officers' per diem (\$100) for these activities. On motion duly made and seconded, it was voted to approve this proposal.

8. *California Medicine:*

Editor Wilbur called upon Mr. Hunton to present a series of articles which the Pharmaceutical Manufacturers' Association had presented for publication in CALIFORNIA MEDICINE. On motion duly made and seconded, it was voted to accept these articles for publication, subject to editorial revisions.

9. *Committee on Committees:*

Chairman Bostick of the Committee on Committees presented a list of recommendations for changes in commission and committee members, creation of new committees and additions to existing committees. On motion duly made and seconded, this list, as appended to these minutes, was approved.

10. *Committee on Public Relations:*

Chairman Malcolm Watts of the Committee on Public Relations reported that the Subcommittee on Television, Motion Pictures and Radio had prepared an outline of a series of television productions and that a maximum budget of \$81,000 for this purpose had been approved by the subcommittee, the parent committee and the steering committee appointed by the Council, the budget to be subject to review and reconsideration periodically.

Dr. Watts also reported that the committee had approved the inclusion of medical economic material in *Newsletter*, including as many as six additional issues annually devoted to medical economic topics.

He also presented a draft of material to be published as a public relations brochure.

On motion duly made and seconded, Dr. Watts' report was accepted, including approval of the proposals outlined above.

11. *Ad Hoc Committee on Scientific Activities and Continuing Education:*

Dr. Wilbur gave a progress report for the ad hoc Committee on Scientific Activities and Continuing Education, including reports on the fields being reviewed by subcommittees in the fields of (1) Annual Sessions, (2) Postgraduate Activities, and

(3) CALIFORNIA MEDICINE. He stated that further reports would be made later in the year.

12. *Committee on Social Security Poll Format:*

Dr. Doyle, chairman of the special Committee on Social Security Poll Format, presented the revised format developed by the committee following its meeting of April 24, 1960, and recommended that the Council approve it for availability to those county societies which wish to use it. On motion duly made and seconded, this format, with revisions, was approved for availability to those county medical societies which wish to poll their members as to their wishes for inclusion under the Social Security laws.

13. *Liaison Committee to State Department of Social Welfare:*

Dr. Quinn reported that the program for social welfare recipients was going well and that funds are available for possible added services. One such addition is under study through a pilot program to provide dental care for recipients under age 17.

Dr. Quinn also reported that consideration was being given to the inauguration of routine health evaluation examinations for the elderly and that a committee on drugs was holding further meetings to stabilize the policies on drugs which may be provided under the program.

Mrs. Eunice Evans of the State Department of Social Welfare thanked Doctors Sherman and Quinn and others for their contributions to the health care program. She reported that the Department of Social Welfare has received a grant of \$50,000 for a research inquiry into the possibility of a coordinated program of total care of the aged, including medical care, nutrition, recreation and other factors.

Mrs. Evans also announced that the Governor's Conference on the Aging will be held in October, in advance of the White House Conference on the Aging scheduled for January, 1961.

14. *State Department of Mental Hygiene:*

Dr. Daniel Blain, State Director of Mental Hygiene, reported that a meeting will soon be held with the C.M.A. Committee on Mental Health and that a program would be developed and presented to the Council later.

He also reported that California now has 47,000 mental hospital beds and is annually admitting and discharging about 25,000 patients for a relatively high turnover rate. The department plans, he said, to increase the utilization of beds in a program of moving away from institutionalizing mental patients and toward retaining such patients in the care of private physicians and hospitals.

15. *California Physicians' Service:*

Dr. John G. Morrison reported that as of April 30, 1960, C.P.S. had about 787,500 beneficiary members, compared with about 730,000 a year earlier, and that the number of physician members had also increased. About 10 per cent of the beneficiary members, he said, come under the "C" schedule of fees.

Discussion was held on the delineation of responsibilities and authorities of C.P.S. On motion duly made and seconded, it was voted to urge the liaison committee of the Commission on Medical Services and C.P.S. to meet at the earliest possible date and to bring back a report at the July Council meeting, at which time the feasibility of a joint meeting between the Council and the Board of Trustees of C.P.S. would be discussed.

16. *Commission on Public Agencies:*

A proposal that the Committee on Veterans' Affairs be authorized to be represented on a joint council to represent the various veterans' groups as well as medicine, was presented. On motion duly made and seconded, it was voted to authorize this participation by the Committee on Veterans' Affairs.

17. *Commission on Community Health Services:*

Dr. MacLaggan presented a format for use by the Joint Council for Health Care of the Aged in evaluating nursing homes. On motion duly made and seconded, the format was approved for a survey of nursing homes.

On motion duly made and seconded, it was voted to name two representatives of the Association as members of an accrediting committee on nursing homes, the Committee on Committees to provide the names of such representatives.

Dr. MacLaggan stated that the Committee on Traffic Safety wished to have the county societies establish local traffic safety committees, the duties of such committees to be the training of ambulance drivers in accordance with new state legal requirements and decisions reached by the House of Delegates. On motion duly made and seconded, it was voted to request the county societies to establish such committees.

Dr. MacLaggan also reported that several resolutions from the 1960 House of Delegates had been assigned to subcommittees for study and later report.

18. *Commission on Cancer:*

Dr. Davis reported that the Commission on Cancer was proceeding to outline the areas of responsibility of the several subcommittees now established under the commission.

19. *Staff Report:*

(a) Mr. Hassard requested Council action on proposals made earlier by the staff for standard procedures to be used in Annual Sessions. On motion duly made and seconded, these proposals were approved.

(b) Mr. Hassard also presented a format to be used in arranging and carrying out the visits of C.M.A. officers to the county societies. On motion duly made and seconded, approval was voted for this format.

20. *Legal Department:*

Mr. Hassard reported on proposed changes in the regulations of the State Board of Pharmacy which would, in effect prohibit the employment of pharmacists in any pharmacy which was owned by one or more physicians. He pointed out that medical ethics do not debar the ownership of pharmacies by physicians *per se* but do prohibit the exploitation of patients through such ownership. On motion duly made and seconded, it was voted to authorize legal counsel to advise the State Board of Pharmacy that the Association would consider such changes in regulations in the light of ethical concepts as shown above.

Adjournment:

There being no further business to come before it, the meeting adjourned at 6:35 p.m.

SAMUEL R. SHERMAN, M.D., *Chairman*
MATTHEW N. HOSMER, M.D., *Secretary*

COMMISSION AND COMMITTEE APPOINTMENTS

June 4, 1960

Commission on Community Health Services:

1. **Committee on Allied Health Agencies.** With the approval of the Chairman of this Committee and the Commission on Community Health Services, the Committee on Committees recommends that:

a. The present membership of the committee be dissolved.

b. The committee be reconstituted as follows:

James MacLaggan, chairman, San Diego (1961)
Thomas Ledwich, Napa (1963)
Robert L. Smith, Jr., San Francisco (1961)
Jack Kramer, Inglewood (1962)
Henry A. Brown, San Mateo (1962)
Max D. Shaffrath, Sacramento (1962)
Harold Kay, Oakland (1963)

Commission on Medical Services:

Under a recent Council decision, the composition of all subcommittees of existing standing committees must be approved by the Council. Therefore,

the Committee on Committees recommends the following:

1. Committee on Government Financed Medical Care. It was voted that the following subcommittees be established.

a. Liaison to Medicare and VA Home Town Care Programs. It was voted to appoint the following for one-year terms:

John Rumsey, San Diego, chairman
John Vaughan, Bakersfield
Ferrall Moore, San Mateo
A. E. Berman, Sacramento
J. Lafe Ludwig, Los Angeles
John C. Morrison, San Leandro
J. B. Price, Santa Ana

b. Liaison to the Department of Health, Education and Welfare. It was voted to appoint the following for one-year terms:

Malcolm Todd, Long Beach, chairman
T. Eric Reynolds, Oakland
Byron Gifford, Santa Barbara
Donald Abbott, Riverside
Ferrall Moore, San Mateo

c. Liaison with the Bureau of Vocational Rehabilitation. It was voted to appoint the following for one-year terms:

Francis J. Cox, San Francisco, chairman
Elizabeth Austin, Los Angeles
Mandel Sherman, Beverly Hills
William H. Todd, Long Beach

d. Although the Committee on Government Financed Medical Care now has 12 members, the Committee on Committees recommends that this committee be increased to 13 and that Malcolm Todd be appointed for a term to end in 1962.

2. Committee on Medical Care Insurance. The Committee on Committees recommends that a new standing committee be established under the Commission, with the following appointments:

Donald Harrington, Stockton, chairman (1962)
Leon O. Desimone, Los Angeles (1962)
Donald D. Lum, Alameda (1963)
Milo Youel, San Diego (1961)
Joseph Telford, San Diego (1963)
Robert Combs, San Francisco (1962)
Frank Ham, Van Nuys (1961)

3. That the following subcommittees be established under this new standing committee.

a. Committee on Uniform Claim Forms. It was voted to appoint the following for one-year terms:

Dudley Cobb, Jr., Los Angeles, chairman
Joseph Telford, San Diego

Roy A. Ouer, San Diego
Leon O. Desimone, Los Angeles
William F. Wagner, San Francisco
Albert F. Zipf, Sacramento

b. Liaison Committee to the Insurance Industry. It was voted to appoint the following for one-year terms:

Joseph Telford, San Diego, chairman
Wilbur G. Rogers, Glendale
Clyde Boice, Palo Alto
Leopold H. Fraser, Richmond
Robert H. Butler, Santa Rosa

c. Committee on Local Medical Society Sponsored Programs. It was voted to appoint the following for one-year terms:

John F. Murray, Fresno, chairman
Robert Combs, San Francisco
David L. Green, Stockton
Wilfred J. Snodgrass, Santa Monica
Robert L. Barmeyer, Long Beach
Herman Stone, Riverside

d. Committee on Miscellaneous Programs. It was voted to appoint the following for one-year terms:

Henry Gibbons, III, San Francisco, chairman
Elwin W. Midgley, Vallejo
John Benton, Los Angeles
Frank Ham, Van Nuys

4. Subcommittee on Industrial Accident Commission. It was voted that a special subcommittee be established under the Commission with the following members appointed for a one-year term:

Francis J. Cox, San Francisco, chairman
H. Dean Hoskins, Oakland
Leon O. Desimone, Los Angeles
Packard Thurber, Jr., Los Angeles

Films for C.M.A. Annual Session Film Symposia Requested

The previously successful film symposia presented during the California Medical Association annual sessions will be repeated in 1961, April 30 to May 1.

Daytime symposia, each one to center around one specialty, are now being planned for the physician. General programs for doctors, their wives, nurses and ancillary personnel will be presented during the evenings.

There will be a moderator and outstanding physicians, preferably authors, as discussants on each symposium.

Authors desiring to show their films should notify Paul D. Foster, M.D., California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

Deadline: December 1, 1960.

— In Memoriam —

ABE, TOM. Died in Los Angeles, June 17, 1960, aged 52, of cancer. Graduate of St. Louis University School of Medicine, Missouri, 1934. Licensed in California in 1938. Doctor ABE was a member of the Los Angeles County Medical Association.

BORDEN, LEMUEL PERRY. Died in Oakland, June 25, 1960, aged 54. Graduate of the University of Oregon Medical School, Portland, 1932. Licensed in California in 1933. Doctor Borden was a member of the Santa Clara County Medical Society.

CAMPBELL, ROBERT A. Died in Whittier, June 23, 1960, aged 90. Graduate of the University of Southern California School of Medicine, Los Angeles, 1894. Licensed in California in 1894. Doctor Campbell was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

CHLOUPEK, TOM VIDGER. Died in Redlands, June 14, 1960, aged 43. Graduate of the University of Oregon Medical School, Portland, 1950. Licensed in California in 1951. Doctor Chloupek was a member of the San Bernardino County Medical Society.

EWER, JOHN NORTON. Died in Piedmont, June 2, 1960, aged 60, of carcinoma of the pancreas. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1927. Licensed in California in 1927. Doctor Ewer was a member of the Alameda-Contra Costa Medical Association.

HANSON, GEORGE BERDELL. Died June 25, 1960, aged 59. Graduate of Northwestern University Medical School, Chicago, Illinois, 1927. Licensed in California in 1927. Doctor Hanson was a member of the Los Angeles County Medical Association.

HICKS, ELIZABETH SHREVE. Died in Tiburon, June 13, 1960, aged 50. Graduate of the University of California

School of Medicine, Berkeley-San Francisco, 1937. Licensed in California in 1937. Doctor Hicks was a member of the San Francisco Medical Society.

JOHNSON, HAROLD HENRY. Died April 17, 1960, aged 65, of arteriosclerotic heart disease. Graduate of Tufts University School of Medicine, Boston, Massachusetts, 1919. Licensed in California in 1948. Doctor Johnson was a member of the Yolo County Medical Society.

MARCUS, JOSEPH HARVEY. Died in Los Angeles, May 23, 1960. Graduate of Tufts University School of Medicine, Boston, Massachusetts, 1929. Licensed in California in 1930. Doctor Marcus was a member of the Los Angeles County Medical Association.

MCWHIRTER, WILLIAM L. Died June 1960, aged 71. Graduate of the University of Texas Medical Branch, Galveston, 1917. Licensed in California in 1923. Doctor McWhirter was a member of the Alameda-Contra Costa Medical Association.

POTTINGER, ROBERT THOMAS. Died in San Marino, July 12, 1960, aged 55. Graduate of Harvard Medical School, Boston, Massachusetts, 1928. Licensed in California in 1929. Doctor Pottinger was a member of the Los Angeles County Medical Association.

RUDE, ANNA E. Died in San Francisco, June 20, 1960, aged 83. Graduate of Cooper Medical College, San Francisco, 1906. Licensed in California in 1906. Doctor Rude was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

WEBSTER, JOHN C. Died June 15, 1960, aged 70. Graduate of New York University College of Medicine, New York, 1915. Licensed in California in 1921. Doctor Webster was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, M.D., M.P.H.
Director, State Department of Public Health

BY MID-JULY, reported cases of paralytic poliomyelitis in California totalled 134, as compared with 100 cases and 60 cases, respectively, in the corresponding periods of 1959 and 1958.

The cases have been distributed throughout the state, with the greatest number reported from Los Angeles and San Diego counties. More than 50 per cent of paralytic poliomyelitis is reported in the under-five age group, in which about 750,000 children have had fewer than the required number of injections, some 335,000 having had no protection whatsoever.

It is estimated that only 40 per cent of California's total population has been protected against paralytic poliomyelitis.

Eight special projects in maternal and child health and crippled children services, with a budget totaling \$426,604, have been approved by the State Department of Public Health for financing from special funds provided by the U. S. Children's Bureau during 1960-61.

The projects include a mental retardation study at Children's Hospital of Los Angeles, a nutrition project by the Berkeley City Health Department, a child amputee prosthetics project by the University of California School of Medicine, Los Angeles, and a hearing project at John Tracy Clinic, Los Angeles.

Pending availability of funds, two other projects were approved for Stanford University School of Medicine in family medicine and in audiology training.

The three-year California-Cornell Automotive Crash Injury Research Project was completed in June. The project was part of a 17-state study, now in its sixth year, conducted by Cornell University.

The purpose of these studies is to show the relation of the structural design of cars to personal injury. Some safety designing has appeared in recent automobile models as the result of the research, such as dashboard padding, the recessed steering wheel, improved door locks, and the use of safety belts.

As its part in the project the State Health Department obtained and processed accident reports, and coordinated the medical procedures among the state and local agencies that provided injury data on accident victims.

Participating organizations included the California Medical Association, physicians and hospitals in local communities, the California Highway Patrol, and the California Hospital Association.

The San Bernardino County Health Department has received one of the annual Samuel J. Crumrine awards for the development of an outstanding program of environmental sanitation. The Crumrine awards are the highest given in the nation for achievement in this field. The contest was open to over 1,200 local health departments from coast to coast.

As president of the American Public Health Association it was my pleasure to present the plaque symbolizing the award to Dr. Merle E. Cosand, health officer of San Bernardino County, at the annual meeting in Denver of the Western Branch of the APHA.

The State Board of Public Health's unanimous decision not to institute action against Stanford University and the College of Medical Evangelists on complaints by the Humane Society of the United States charging illegal use of laboratory animals was recently upheld by the Alameda County Superior Court.

In its investigation of the charges, the department found no significant violations relating to the use and care of laboratory animals. In both cases the Board of Health unanimously resolved to order no further proceedings, since the facts disclosed did not warrant further action.

Humane Society attorneys then prepared a writ of mandamus against the director of the department for the purpose of forcing the department to conduct a formal hearing on the issues relating to the College of Medical Evangelists. A second such writ was contemplated for the Stanford situation.

Ensuing arguments before Superior Court Judge Cecil Mosbacher resulted in a decision in favor of the department and the board. The Humane Society has stated intention to appeal this decision, and to fulfill its proposed action against the department and the board for the resolution relating to Stanford.

INFORMATION

Old Age Medical Care Needs

A Comprehensive Medical Health Evaluation Program Proposed for Old Age Security Recipients

A VOLUNTARY PROGRAM of health evaluation examinations for Old Age Security (OAS) recipients 65 to 70 years of age that will serve a dual purpose, has been proposed by the State Department of Social Welfare on a one-year pilot basis.

Improved preventive medicine for California's aged and data for analysis of the extent and nature of the health problems in that group are the objectives. The program has not yet been worked out in the detail that would be necessary for its adoption, but it is being studied at state level by representatives of C.M.A., Social Welfare, and others. Achievement of the objectives would depend on the degree to which California physicians and medical societies participated. The 65 to 70 age group was suggested for the study because it was considered adequately representative for statistical purposes, yet within the limited budget. Also, it was felt that rehabilitation possibilities would be higher in this bracket.

Present estimates indicate that approximately 4,000 OAS beneficiaries a month will be eligible for a voluntary health evaluation examination. These examinations would be performed by the individual's personal physician at a fee yet to be determined. If the eligible person had no personal physician, he would be referred to physicians who have agreed through their county societies to do this sort of examination for the fee that the OAS is able to pay for the service.

The principle of the proposed program has received the endorsement of the C.M.A. Council. The

structure of the program on a pilot basis has been developed by the State Department of Social Welfare and its Medical Care Advisory Committee, on which the C.M.A. is represented. The move is an example of positive application of A.M.A. president Doctor Louis M. Orr's recent pronouncement urging better organization of medical care programs for the needy aged and *improved preventive measures*.

It is anticipated that the physicians in some counties will prefer to have laboratory and radiology tests secured on a group basis, while in other counties the physician will prefer that they be obtained in another manner. Provision has been made for local county option to select the method for obtaining these services best adapted to the physicians in the area.

An advisory committee composed of experienced internists and general physicians would recommend the nature and extent of examinations, the routine laboratory and radiologic work to be obtained, and the type of check-off history and medical report form to be used. Their primary purpose would be to provide medical orientation to the entire program. Recommendations would be minimal and would not limit the examining physician's judgment. Responsibility for indicated follow-up treatment would, of course, remain with the examining physician.

By use of a physician's capacity for early diagnosis, the elderly patients of the state would be able in a dignified way to improve their health habits and, through training and education at the hands of a physician, could better learn to do something constructive about their health problems. A principle of the study is that the early detection, alleviation or reduction of the severity of disability and illness can result in a great saving to the individual and the community, and perhaps permit the patient to make a greater constructive contribution to himself and to the community.

Of significant value also is the wealth of information on this so-far little documented area of health needs that such a program would provide. Already it has been found out, in attempts to come to grips with problems of health care for the aging population, that until such information is available, it is virtually impossible to make broad scale plans.



WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

Thirty-Seventh Annual Meeting, National Auxiliary

THE thirty-seventh annual convention of the Woman's Auxiliary to the American Medical Association was held at the Deauville Hotel, Miami Beach, Florida, June 13 to 16, concurrently with the A.M.A. convention. It was a most stimulating, enlightening and inspiring experience. I was impressed with the wonderful contributions the Woman's Auxiliaries in our 50 states are making. It is recognized that the C.M.A. Auxiliary plays an important role in determining how the great resources of the national auxiliary, with its thousands of members, may be directed to make the national organization a more effective and meaningful one.

The Woman's Auxiliary to the California Medical Association remains in first place in membership with 7,068. This membership entitled us to 24 delegates (one for every 300 members). Of the possible 24 delegates, there were 18 active, interested, loyal women in attendance. As chairman of the delegation, I was most pleased and proud of this excellent representation.

Los Angeles County Auxiliary was commended for its contribution of over \$4,000 to A.M.E.F. This was the largest sum ever given by any county medical society in the country. An additional thrill was the honor bestowed on Mrs. E. Vincent Askey who received the award in behalf of Los Angeles County. The total contribution by the Woman's Auxiliary to the C.M.A. was \$13,688, placing it fourth amongst the states.

The Woman's Auxiliary to the A.M.A. presented the A.M.E.F. with a check for \$170,230, the largest to date, and an increase of more than \$30,000 over last year. Five thousand dollars of the total was given in memory of auxiliary members who died during the past year.

The C.M.A. Auxiliary is proud to have two of its former presidents serving in offices on the national level. Mrs. Theodore Poska, our immediate past president, was installed as constitutional secretary, and Mrs. Stanley Truman is serving her second year as a member of the board of directors.

Dr. Glen R. Shepherd, assistant secretary, A.M.A. Council on Medical Education and Hospitals, spoke on "Medicine as a Career." This talk was arranged by the Para-Medical Careers Committee, which is now termed Health Careers. This extremely important committee has opened up many new vistas to our youth and has made them aware of the many fields pertaining to medicine.

Dr. Edward L. Bortz, an A.M.A. past president and consultant to the Committee on Aging, presented a most timely and informative message entitled "The Evergreen Years." His excellent advice and suggestions left us, to use his own phrases, "feeling in a hurry to get older" and welcoming the "grandeur of maturity." His compliment, "One woman on her feet is worth three on her seat," literally made us all stand up.

Dr. McKinnie L. Phelps, vice-chairman of the A.M.A. Council on Legislative Activities, brought us up to date with his talk on "A.M.A. Platform for Political Action." This message urged us to keep abreast of legislation at this very important time, and to work closely with our medical societies, the A.M.A. and legislative council members. He also encouraged us to work actively in the field of federal legislation through other organizations with which we are affiliated.

A most worthwhile talk and a subject that interested all of us was presented by John Bach of the A.M.A. Division of Communication. He recommended that we think carefully of "what we say and how we say it" and to recognize the significance of the words. He suggested that each auxiliary appoint critics to read medical articles and evaluate them.

In 1931 the A.M.A. requested aid of the Woman's Auxiliary to further the sales of *Hygeia*, which since has become *Today's Health*. Circulation then was 160,000. Auxiliaries throughout the country worked diligently, increasing the circulation to more than 830,000. At our Miami Beach meeting Mr. Robert Enloe, director of circulation and records, A.M.A., gave the Auxiliary a new "Project 60"—to aid in increasing the circulation of *Today's Health* in schools, as well as to members of the faculty. Some 28,000 schools and colleges are now receiving *Today's Health* monthly.

The acquisition of members, both new and former ones, was strongly emphasized and urged. This project has been of particular interest to me. I do think that with your assistance, progress can be made. Although the Auxiliary has the largest membership in the United States, it is far below its potential. Auxiliary membership in California is 7,068, which is less than 40 per cent of the C.M.A. total. Our goal is to match the C.M.A. total of over 17,000. Our aim this year is "Every Doctor's Wife an Auxiliary Member." I am sure that if every physician showed enthusiasm for the Auxiliary, his wife would be a member. It is important that each doctor encourage his wife to inquire about the many endeavors of the Auxiliary and its many accomplishments.

As chairman of the delegation, I wish to express my sincere thanks to the loyal and hard-working delegates—especially to Mrs. Robert Gobar, who acted as reporter.

I am personally indebted to the C.M.A. delegation for many kindnesses to me.

MRS. SAMUEL GENDEL
President, Woman's Auxiliary to the
California Medical Association

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Dr. Laurance W. Kinsell, director of the Institute for Metabolic Research at Highland-Alameda Hospital in Oakland, has received a grant of \$10,000 from the Wesson Fund for Medical Research and Education. The grant is in support of studies by Dr. Kinsell on the disposition of edible fats in the human organism.

IMPERIAL

Dr. Paul O'Rourke, until recently in private practice in Marin County, last month took the newly created position of director of public health for Imperial County. He replaced **Dr. Hyland J. Hebert** as county health officer, Dr. Hebert remaining with the department as assistant health officer in charge of maternity and pediatrics.

As director, Dr. O'Rourke will coordinate the county's three public health facilities, the county hospital, the tuberculosis sanitarium and the Department of Health.

LOS ANGELES

The newly elected officers of the **Southwestern Pediatric Society** are: president, **Dr. John Wilcox**, Pomona; vice-president, **Dr. Deron Hovsepian**, Pasadena; and secretary-treasurer, **Dr. Harry O. Ryan**, Pasadena.

* * *

Dr. John H. Aldes, director of the Department of Rehabilitation, Cedars of Lebanon Hospital, has been named by the President's Committee on Employment of the Physically Handicapped to receive the 1959 Physician's Award.

The award, an illuminated scroll signed by the President of the United States, will be presented to Dr. Aldes at the annual banquet of the Congress of Industrial Health of the American Medical Association in Charlotte, North Carolina, on Tuesday, October 11.

* * *

Dr. Charles M. Stewart, Los Angeles, was elected president of the Western Section of the American Urological Association at the annual meeting of the organization, held in Vancouver, B. C., June 20 to 23. **Dr. James Ownby, Jr.**, San Francisco, was named president-elect, and **Dr. John W. Dorsey**, Long Beach, was elected secretary-treasurer.

* * *

A booklet containing dietary instructions that can be given by physicians to patients for whom they have prescribed a **low fat diet** has been prepared by the Los Angeles County Heart Association's Special Diets Committee.

Titled "Controlled Fat Menu Plan," the 28-page booklet covers a number of medically-approved general "do's and don't's" of diet and 14 pages of recipes for many types of appropriate meals. Priced at 15 cents a copy, it may be ordered from Los Angeles County Heart Association, 2405 West Eighth Street, Los Angeles 57

SAN FRANCISCO

Dr. Frederick C. Cordes, professor-emeritus of ophthalmology, University of California School of Medicine, San Francisco, was awarded the Howe Prize Medal of the Section on Ophthalmology of the American Medical Association at its annual meeting in June.

The medal, awarded for outstanding service in the field of ophthalmology, was presented by Sir Stewart Duke-Elder, ophthalmologist to Britain's royal family, and a past recipient of the medal.

* * *

The 62nd annual meeting of the **American Hospital Association** will be held in San Francisco August 29 to September 1. An attendance of 12,000 is forecast by the association.

* * *

John R. Little early last month was elected president of the board of trustees of the Presbyterian Medical Center of San Francisco, which on May 1 of this year took over all the San Francisco buildings and facilities of the Stanford University School of Medicine and Stanford Hospitals. Many of the physicians who did not remain on the Stanford teaching staff when the School of Medicine was moved to Palo Alto and the Stanford campus have joined the staff of the new Presbyterian Center.

Chief of staff is **Dr. Forrest M. Willett**, and the chiefs of services are: Anesthesiology, **Philip J. Bailey, M.D.**; cardiopulmonary service, **Arthur Selzer, M.D.**; cardiovascular surgery, **Frank Gerbode, M.D.**; dentistry, **Edward J. Lattig, D.D.S.**; dermatology, **Harold M. Schneidman, M.D.**; E.N.T., **Robert C. McNaught, M.D.**; medicine, **George B. Robson, M.D.**; neurology, **Knox H. Finley, M.D.**; obstetrics, gynecology, **C. Frederic Fluhmann, M.D.**; ophthalmology, **Jerome W. Bettman, M.D.**; orthopedics, **Donald E. King, M.D.**; outpatient clinics, **Ralph W. Schaffarzick, M.D.**; pathology, **Robert J. Kleinhenz, M.D.**; pediatrics, **Charles W. Leach, M.D.**; physical medicine, **Robert P. Watkins, M.D.**; psychiatry, **J. P. Kahn, M.D.**; radio-isotope laboratory, **Jerold M. Lowenstein, M.D.**; radiology, **William L. Anderson, M.D.**; surgery, **Victor Richards, M.D.**; urology, **Henry M. Weyrauch, M.D.**

SAN LUIS OBISPO

Dr. H. O. Swartout retired on June 30, this year, from the position of Health Officer of the County of San Luis Obispo. Dr. Swartout had served in that capacity for 12 years, having joined the department in 1946 after a number of years with the Los Angeles County Health Department.

SAN BERNARDINO

The San Bernardino County Health Department has received a **Samuel J. Crumbine Award** for the development of an outstanding program of environmental sanitation. The Crumbine awards are the highest given in the nation for achievement in the field of environmental sanitation. The contest was open to over 1,200 local health departments from coast to coast.

In recognition of a well-balanced, strong program of sanitation services, **Dr. Malcolm H. Merrill**, president of the American Public Health Association and director of the California State Department of Public Health, presented the plaque symbolizing the award to **Dr. Merle E. Cosand**, health officer of San Bernardino County, at the annual meeting of the Western Branch of the American Public Health Association in Denver in May. Dr. Cosand and **Richard E. Elliott**, director of sanitation service for San Bernardino County, were each given personal recognition in the form of a bronze medal for their leadership in the program.

CALIFORNIA MEDICINE

SANTA CLARA

Friends, colleagues and patients of the late Dr. Albert M. Snell have begun subscriptions to a memorial fund which will endow a continuing series of lectures on gastroenterology to honor his memory. Dr. Snell, an outstanding teacher, student and practitioner of medicine, died last February. He was a member of the faculty of Stanford University School of Medicine, Palo Alto.

Persons wishing to make contributions to the memorial lecture endowment may do so by mailing a check to the Albert M. Snell Fund, Palo Alto Medical Research Foundation, Palo Alto, California.

SONOMA

The Sonoma County Medical Society has prepared, with the help of C.M.A.'s Public Relations Department, a pamphlet for distribution to new residents of the county through Welcome Wagon, Hospitality Hostess and similar services. In a warm, friendly, informal way, the pamphlet welcomes new residents, tells them of the services offered by the county medical society, recommends that they choose a family physician against possible need later, offers help in the selection of health insurance, and lists the telephone numbers of the society's emergency medical service.

Although in use for only a short time, the pamphlet already has drawn so much favorable response that society officials consider it a good instrument in public relations. Other societies wishing to use something of the same kind may obtain copies for examination by writing to Sonoma County Medical Society, 300 American Trust Building, Santa Rosa.

GENERAL

Patients on sodium-restricted diets can now "read the label" for the sodium content of their drinking and cooking water.

The California Heart Association and the State Department of Public Health have just completed a survey of the sodium in public water systems supplying approximately 80 per cent of California's population.

The report, titled "Sodium Content of Drinking Water," is intended as a reference source of physicians, dietitians, health departments, medical teaching institutions and chapters of the California Heart Association. It was compiled through the joint efforts of the California State Department of Public Health and the California Heart Association's nutrition committee. Distribution was made July 1 to all county and city health departments and medical teaching institution libraries. Copies may be obtained from county Heart Associations, the California Heart Association, or the California State Department of Public Health offices.

* * *

The American Urological Association has announced the opening of the contest for its annual award of \$1,000 (first prize of \$500, second prize \$300, and third prize \$200) for essays on the result of some clinical or laboratory research in Urology. Competition is limited to urologists who have been graduated not more than ten years, and to hospital interns and residents doing research work in urology.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Biltmore, Los Angeles, May 22 to 25, 1961.

Full particulars may be obtained from the executive secretary of the Association, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before December 1, 1960.

C.M.A. Liaison with County Societies

To improve communications between the headquarters offices of the California Medical Association and component county societies as well as individual physicians, seven members of the staff have been assigned to maintain liaison with various areas of the state.

It is planned that the staff members will periodically visit the county society offices in the areas to which they are assigned in order to learn of any problems, or of new methods of dealing with problems that a county organization may have developed, and then will transmit their information to the appropriate department in the state association for action. Names of the staff members and the county societies to which they are assigned:

Walter E. Batchelder, M.D.—Santa Cruz, San Benito, Monterey, San Luis Obispo, Santa Barbara and Ventura.

Ed Clancy—Los Angeles, San Diego, Imperial, Orange, Riverside, San Bernardino and Inyo-Mono.

Jack Collins—Fresno, Kings, Tulare and Kern.

John Hunton—Six societies in District Nine (Marin and north).

Robert Marvin—Nine societies in District Ten (Sacramento and north).

Robert Thomas—Alameda-Contra Costa, San Francisco, San Mateo and Santa Clara.

William Whelan—San Joaquin, Merced, Stanislaus and Madera.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, \$150.00; four weeks, \$250.00.

Arthritis and Rheumatism. Wednesday and Thursday, August 17 and 18. Twelve hours. Fee: \$15.00 (includes lunch).

Obstetrical Procedures and Complications. Friday and Saturday, August 26 and 27. Fourteen hours. Fee: \$50.00 (includes two luncheons).

Fetal Electrocardiography. Sunday, August 28. Seven hours. Fee: \$20.00.

Elements of Psychiatry in Clinical Practice. Thursdays, September 17 through June 11. (2 Conferences at Lake Arrowhead, plus weekly evening sessions.) Ninety-two hours. Fee: \$150.00.

Below-Knee Prosthetics. Monday through Friday, September 19 through 23. Enrollment limited to 20. Fee: \$125.00.

Psychotherapeutic Methods for General Practitioners. Mondays, October 3 through March 27. Seventy-two hours. Fee: \$75.00.

Neuropathology. Tuesdays and Thursdays, October 18 through December 6. Twenty-eight hours. Fee: \$105.00.

Below-Knee Prosthetics. Monday through Friday, October 31 through November 4. Enrollment limited to 20. Fee: \$125.00.

Diagnosis and Treatment of Anemia. Friday and Saturday, December 9 and 10. Twelve hours. Fee: \$40.00.

Mexico—Clinical Postgraduate Program (sessions to be held in Mexico City, Guadalajara and Acapulco). January 9 through 22. Twenty-four hours. Fee: \$125.00.

Bedsides Clinics (Harbor Hospital, Torrance). Thursdays, January 12 through March 30. Twenty-four hours. Fee: \$50.00.

Psychiatry in Medicine. Friday and Saturday, March 10 and 11. Twelve hours. Fee: \$15.00 (includes one lunch and one dinner).

Israel—Clinical Postgraduate Program (sessions to be held in Jerusalem and Tel Aviv). April 13 through May 4. Thirty-two hours. Fee: \$150.00.

Low Back Pain. Friday and Saturday, May 12 and 13. Twelve hours.*

For Nurses and Ancillary Personnel

Thirteen courses will be offered during the summer and fall for nurses and other ancillary personnel.

Contact: Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Obstetrics and Gynecology. Thursday to Saturday, September 15 to 17. Twenty-one hours. Fee: \$50.00.

Radiological Physics (32 Tuesday evenings). September 20 through April 24. For residents. Fee: \$100.00.

Psychotherapy in General Practice. Wednesday evenings, September 21 through December 7. Fee: \$25.00.

Neuropsychiatry in General Practice (Napa State Hospital). Thursday evenings, September 22 through November 27. Fee: \$25.00.

Advances in Surgical Anatomy, Normal Anatomy and Histology of the Eye. Thursday and Friday, September 22 and 23. Fourteen hours. Fee: \$50.00.

Tonography. Saturday, September 24. Seven hours. Fee: \$25.00.

Internal Medicine. Tuesday through Saturday, September 27 through October 1. Thirty-five hours.*

Surgery, Franklin Hospital, Saturday and Sunday, October 8 and 9. Fourteen hours. Fee: \$25.00.

Environmental Dermatoses Due to Contact and Physical Agents. Friday and Saturday, October 14 and 15. Fourteen hours.*

Advances in Ophthalmic and General Pathology. Thursday through Saturday, November 3 through 5. Twenty-one hours.*

Symposium on Ear-Nose-Throat Problems in Children, Children's Hospital, Saturday, November 5. Seven hours. Fee: \$12.50.

*Fee to be announced.

A Course in Ophthalmology. Thursday through Saturday, December 1 through 3. Twenty-one hours.*

Symposium on Eye Problems in Children, Children's Hospital, Saturday, January 14. Seven hours. Fee: \$12.50.

Symposium on Perinatal Problems, Children's Hospital, Saturday, March 11. Seven hours. Fee: \$12.50.

Man and Civilization: The Control of the Mind. Saturday through Monday, January 28 through January 30. Twenty-one hours.*

Psychotherapy in General Practice. Wednesday evenings, February 8 through April 26. Fee: \$25.00.

Diagnostic Radiology. Wednesday through Monday, March 15 through 20. Forty-eight hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: \$350.00.

For Nurses and Ancillary Personnel

Twelve courses will be offered during the summer and fall for nurses and other ancillary personnel.

Contact: Seymour M. Farber, M.D., assistant dean, Department of Continuing Medical Education, University of California Medical Center, San Francisco 22. MOnrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Eye Conference. Each Monday morning.

Didactic Course in Ophthalmology. Monday and Wednesday, 7 to 8:30 p.m.

Postgraduate Conference, Retinal Detachment. Wednesday, Thursday and Friday, September 14, 15, 16.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Cardiac Resuscitation. Each Wednesday throughout the year, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Tuition for all other physicians: \$30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: \$100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: \$85.00. Physicians may register at any time.

Contact: Phil R. Manning, M.D., associate dean and director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

CLINICAL TRAINEESHIPS available in all clinical departments by arrangement with the Postgraduate Division and the chairman of the department or departments involved. Eighty hours minimum. Fee: As arranged.

Diseases of the Chest: Two and four-week Traineeships in cooperation with the Los Angeles County Hospital. Dates as arranged.

Anesthesia. Monday through Friday. Dates as arranged. Six months. Fee: \$350.

JOINT MANIPULATION. Monday through Friday, 8:00 to 12:00, dates to be arranged. Twenty hours. Fee: \$75.00.

Alumni Postgraduate Convention Refresher Courses, March 12 and 13, on the campus of the College of Medical Evangelists at White Memorial Hospital.

For information contact: G. E. Norwood, M.D., assistant dean and chairman, Division of Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. Angelus 9-7241, Ext. 214.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSES

For **Dunsmuir, Redding, Chico, and Marysville** in cooperation with Stanford University School of Medicine. Begins week of September 19, 1960.

For **Eureka, Ukiah, Napa and Auburn** in cooperation with University of California, San Francisco School of Medicine. Begins week of September 19, 1960.

POSTGRADUATE INSTITUTES—1961

Southern Counties, February 2 and 3, El Mirador Hotel, Palm Springs, in cooperation with University of Southern California School of Medicine. *Chairman:* Raymond Tatrow, M.D., 1875 North "D" Street, San Bernardino.

West Coast Counties, March 2 and 3, Del Monte Lodge, Pebble Beach, in cooperation with College of Medical Evangelists. *Chairman:* A. F. Kandlbinder, M.D., 835 Cass Street, Monterey.

North Coast Counties, March 23 and 24, location to be announced, in cooperation with University of California, San Francisco. *Chairman:* Milton A. Antipa, M.D., 50 Montgomery Drive, Santa Rosa.

San Joaquin Valley, April 13 and 14, Ahwahnee Hotel, Yosemite, in cooperation with UCLA School of Medicine. *Chairman:* Malcolm J. Masten, M.D., 1051 R Street, Fresno.

Sacramento Valley Counties, June 29 and 30, in cooperation with Stanford University School of Medicine. Lake Tahoe. Location and regional chairman to be announced.

AUDIO-DIGEST FOUNDATION, a nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. Audio-Digest Internal Medicine will shortly be available on long-play discs, requiring only a 33 1/3 rpm phonograph to utilize the service. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

AUGUST MEETINGS

RENO SURGICAL SOCIETY 10th Annual Conference. August 18, 19 and 20. The Mapes Hotel, Reno. *Contact:* Harry B. Gilbert, M.D., 275 Hill Street, Reno, Nevada.

AMERICAN ASSOCIATION OF BLOOD BANKS, Jack Tar Hotel, San Francisco. August 21 through 26. *Contact:* John B. Alsever, M.D., secretary, 1211 W. Washington St., Phoenix, Arizona.

AMERICAN PHYSIOLOGICAL SOCIETY. August 22 through 26. Stanford University, 300 Pasteur Drive, Palo Alto. *Contact:* Mr. Ray G. Daggs, executive secretary, 9650 Wisconsin Ave., Washington 14, D. C.

AMERICAN HOSPITAL ASSOCIATION, Civic Auditorium, San Francisco. August 27 through September 1. *Contact:* Mr. Maurice J. Norby, assistant director, 18 E. Division St., Chicago.

SEPTEMBER MEETINGS

PACIFIC DERMATOLOGIC ASSOCIATION INC. 12th Annual Meeting. Empress Hotel, Victoria, British Columbia. September 2 through 4. *Contact:* Edward Ringrose, M.D., secretary, 2636 Telegraph Ave., Berkeley.

OREGON STATE MEDICAL SOCIETY, Portland. September 7 through 9. *Contact:* Mr. Roscoe K. Miller, executive secretary, 1115 S. W. Taylor St., Portland 5, Oregon.

NEVADA STATE MEDICAL ASSOCIATION Annual Meeting. September 7 through 10. Stardust Hotel, Las Vegas. *Contact:* Nelson B. Neff, executive secretary, P. O. Box 2790, Reno, Nevada.

POSTGRADUATE ASSEMBLY OF SAINT JOHN'S HOSPITAL. September 8 through 10. 9 a.m. to 4 p.m., St. John's Hospital, Santa Monica. *Contact:* John C. Eagan, M.D., director, 1328 22nd St., Santa Monica.

SANTA BARBARA COUNTY HEART ASSOCIATION Physicians Symposium. September 17, 9:00 a.m. to 5:00 p.m., Biltmore Hotel, Santa Barbara. *Contact:* E. J. Hannon, executive director, 18 La Arcada Court, Santa Barbara.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE Annual Meeting, Yosemite. September 23, 24 and 25. *Contact:* Barbara E. Oulton, executive secretary, 350 Post St., San Francisco 8.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Convention. September 25 through 28. Olympic Hotel, Seattle, Washington. *Contact:* R. W. Neill, executive secretary, 1309 7th Avenue, Seattle, Washington.

SOUTHERN CALIFORNIA SOCIETY OF GASTROENTEROLOGY Panel Discussion "Ulcerative Colitis." September 27. Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

PAN-PACIFIC SURGICAL ASSOCIATION 8th Intensive Surgical Congress, embracing all Surgical Specialties. September 27 through October 5. Honolulu, Hawaii. *Contact:* F. J. Pinkerton, M.D., director general, Suite 230, Alexander Young Building, Honolulu 13.

OCTOBER MEETINGS

AMERICAN SOCIETY OF PLASTIC AND RECONSTRUCTIVE SURGERY. Statler Hotel, Los Angeles, October 2 through 7. *Contact:* Thomas R. Broadbent, M.D., secretary, 508 E. S. Temple, Salt Lake City.

SAN DIEGO COUNTY HEART ASSOCIATION 10th Annual Symposium on Heart Disease. October 3 and 4. El Cortez Hotel. *Contact:* O. Martin Avison, 3545 Fourth Avenue, San Diego 3.

AMERICAN ASSOCIATION FOR THE SURGERY OF TRAUMA. Coronado Hotel, San Diego, October 5 through 7. *Contact:* William T. Fitts, Jr., M.D., secretary, 3400 Spruce St., Philadelphia 4.

LOS ANGELES COUNTY HEART ASSOCIATION 30th Annual Professional Symposium on Cardiovascular Diseases.

October 5 and 6. Beverly Hilton Hotel, Beverly Hills. Contact: Los Angeles County Heart Association, 2405 W. 8th St., Los Angeles 57.

SAN FRANCISCO HEART ASSOCIATION 30th Annual Postgraduate Symposium on Heart Disease. October 5 through 7. St. Francis Hotel, San Francisco. Contact: Mr. Lawrence I. Kramer, Jr., executive director, 259 Geary St., San Francisco 2.

WESTERN INDUSTRIAL MEDICAL ASSOCIATION combined Meeting with 4th Western Industrial Health Conference. October 7 through 9. Jack Tar Hotel, San Francisco. Contact: Verne G. Ghormley, M.D., president, 3032 Tulare Street, Fresno 2.

METABOLIC ERRORS, GENETICS AND MENTAL DISEASE, Second Invitational Conference. October 8, Napa State Hospital, Napa. Contact: David Wardell, M.D., chief of professional education, Sonoma State Hospital, El-dridge, Calif.

AMERICAN COLLEGE OF SURGEONS, 46th Annual Clinical Congress, San Francisco. October 10 to 14. Contact: William E. Adams, M.D., secretary, 40 E. Erie St., Chicago 11, or Leon Goldman, M.D., arrangements chairman, professor and chairman, Department of Surgery, University of California Medical Center, San Francisco 22.

AMERICAN CANCER SOCIETY CALIFORNIA DIVISION Annual Meeting. October 13 through 15. Villa Hotel, San Mateo. Contact: Jane N. Lounsbury, assistant director, Field Services, 467 O'Farrell, San Francisco.

KAISER FOUNDATION HOSPITALS IN NORTHERN CALIFORNIA Fourth Annual Symposium on Human Genetics. October 14 and 15. Fairmont Hotel, San Francisco. Contact: Martin A. Shearn, M.D., Director of Medical Education, 280 West MacArthur Blvd., Oakland.

CALIFORNIA ACADEMY OF GENERAL PRACTICE 12th Annual Scientific Assembly. October 16 through 19. Masonic Memorial Temple, San Francisco. Contact: William W. Rogers, executive secretary, 461 Market St., San Francisco 5.

WESTERN ORTHOPEDIC ASSOCIATION Annual Convention. October 22 through 27. Hotel Del Coronado, Coronado. Contact: Mrs. Vi Mathieson, executive secretary, 354 21st St., Oakland 12.

ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICERS. Jack Tar Hotel, San Francisco. October 26 through 28. Contact: A. C. Offutt, M.D., secretary-treasurer, 1330 W. Michigan Street, Indianapolis 7.

ST. JUDE HOSPITAL—FULLERTON 2nd Annual Postgraduate Assembly. October 27 and 28. St. Jude Hospital. Contact: B. L. Tesman, M.D., chairman, St. Jude Hospital, Fullerton.

AMERICAN SCHOOL HEALTH ASSOCIATION, San Francisco. October 30 through November 4. Contact: A. O. DeWeese, M.D., executive secretary, 515 E. Main St., Kent, Ohio.

AMERICAN PUBLIC HEALTH ASSOCIATION, San Francisco. October 31 through November 4. Contact: Berwyn F. Mattison, M.D., executive director, 1790 Broadway, New York 19.

NOVEMBER MEETINGS

SAN DIEGO COUNTY GENERAL HOSPITAL 14th Annual Postgraduate Assembly. Wednesday and Thursday, November 2 and 3. San Diego County General Hospital, North End of Front Street, San Diego. Contact: Frank H. Carter, M.D., chairman, 2001 Fourth Avenue, San Diego 1.

AMERICAN SOCIETY OF TROPICAL MEDICINE AND HYGIENE. Biltmore Hotel, Los Angeles. November 2 through 5. Contact: Rolla B. Hill, M.D., executive secretary, 3575 St. Gaudens Rd., Miami 33, Florida.

PACIFIC COAST FERTILITY SOCIETY. November 10 through 13, Hotel Tropicana, Las Vegas, Nev. Contact: Anah C. Wineberg, M.D., secretary-treasurer, 3120 Webster Street, Oakland.

CALIFORNIA SANATORIUM ASSOCIATION Annual Business, Clinical and Administrative Session. November 12. Olive View Hospital, Olive View, Calif. Contact: J. P. Myles Black, M.D., Olive View Hospital, Olive View, Calif.

CALIFORNIA CONFERENCE OF LOCAL HEALTH OFFICERS Fall Meeting, November 15 and 16. State Department of Public Health, 2151 Berkeley Way, Berkeley 4. Contact: State Department of Public Health, Berkeley.

AMERICAN COLLEGE OF PHYSICIANS Southern California Regional Annual Basic Science Lectureship. November 18, California Club, Los Angeles. Dinner and cocktails, 6:30 p.m. Speaker: Melvin Calvin, Ph.D., professor of chemistry, University of California, Berkeley. Subject: "Origins of Life." Members and invited guests. Contact: George C. Griffith, M.D., governor ACP, P.O. Box 25, 1200 N. State Street, Los Angeles 33. CApitol 5-3131, Ext. 7-1543.

SOUTHERN CALIFORNIA SOCIETY OF GASTROENTEROLOGY Panel Discussion "Enzymology and G.I. Diagnosis." November 22. Los Angeles County Medical Association. Contact: William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

DECEMBER MEETINGS

AMERICAN COLLEGE OF CHEST PHYSICIANS Sixth Annual Postgraduate Course on Diseases of the Chest. December 5 through 9, 9 to 5 daily, Jack Tar Hotel, San Francisco. Contact: Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11, Ill.

1961 MEETINGS

LONG BEACH HEART, CANCER AND TB Third Annual Medical Symposium on Diseases of the Heart, Lungs and Chest. January 18, 1:30 p.m., Long Beach Petroleum Club. Contact: Leslie R. Raymond, executive director, 2034 Pacific Avenue, Long Beach.

AMERICAN COLLEGE OF PHYSICIANS Southern California Region, Annual Meeting, in cooperation with Northern California and Nevada, Arizona and New Mexico. Biltmore Hotel, Santa Barbara, February 3, 4, 5, 1961. Abstracts (300 words) of papers for consideration of presentation at the meeting should be sent in triplicate before November 1 to Sherman Mellinkoff, M.D., chairman, scientific program committee, U.C.L.A. Medical Center, Los Angeles 24.

SOUTHERN CALIFORNIA SOCIETY OF GASTROENTEROLOGY. "Problems and Pitfalls in Differential Diagnosis of Jaundice"—Leon Schiff, M.D., February 27, Los Angeles County Medical Association. Contact: William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

SOUTHWESTERN PEDIATRIC SOCIETY Postgraduate Lecture Series. March 7 and 8, Statler Hotel, Los Angeles. Contact: Harry O. Ryan, M.D., secretary, 194 N. El Molino, Pasadena.

COLLEGE OF MEDICAL EVANGELISTS Annual Alumni Postgraduate Convention. Scientific Assembly, Ambassador Hotel, March 14, 15 and 16. Contact: F. Harriman Jones, M.D., general chairman, College of Medical Evangelists, 316 North Bailey Street, Los Angeles 33.